

**The Effects of the Mexico City Policy on
Antenatal Care and Skilled Birth Attendance
in Developing Countries**

By

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Abstract

LISA CARROLL: The Effects of the Mexico City Policy on Antenatal Care and Skilled Birth Attendance in Developing Countries (Under the direction of Sue Tolleson-Rinehart and Sian Curtis)

The Mexico City Policy is a contentious policy regulating financial aid for international non-governmental organizations involved in family planning and reproductive health, and over the last thirty years, it has been the object of significant political tug-of-war. Since its inception in 1984, the arguments for and against this policy have been based primarily in ideological arguments about abortion and partisan rhetoric. There have been few efforts to assess the actual effects of the policy on aid beneficiaries. In this study, I used Demographic and Health Survey (DHS) data to determine if women in countries with a high degree of exposure to the Mexico City Policy have diminished odds of having effective antenatal care and skilled birth attendance at delivery compared to women in countries with a lower degree of exposure to the policy. The results of this analysis suggest that the maternal health outcomes improved in most parts of the world between 1993 – 2000 and 2001 – 2008 regardless of exposure to the policy. The results also indicate that countries that received a higher degree of financial support for reproductive health between 1995 and 2000 made faster progress on maternal health outcomes in many parts of the world. Countries in sub-Saharan Africa, however, did not make comparable progress on maternal health outcomes.

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List of Abbreviations

ANC – Antenatal/Prenatal Care
CI – Confidence Interval
DHS – Demographic and Health Surveys
FP – Family Planning
GDP – Gross Domestic Product
IQR – Interquartile Range
MCP – The Mexico City Policy
MDG – The United Nations’ Millennium Development Goals
NGO – Non-governmental organization
OECD – The Organization for Economic Cooperation and Development
OR – Odds Ratio
RHC – Reproductive Health Care
SD – Standard Deviation
TFR – Total Fertility Rate
USAID – United States Agency for International Development
USD – United States Dollar
WHO – The World Health Organization

Introduction

As in medicine and domestic public health, evidence-based policy is a concept whose time has come for global health. In order to create coherent policies that can effectively achieve their stated goals, it is essential that policy decisions be informed by evidence whenever possible. The Mexico City Policy (MCP) is an example of a policy that suffers from a severe shortage of evidence and an excess of volatile ideological rhetoric¹. Originally enacted in 1984 by the Reagan administration, this policy effectively eliminates funding from the United States for any international non-governmental organization (NGO) that performs abortions, provides counseling or referrals, or engages in any advocacy for abortion rights within their country². Since its inception, subsequent administrations have either reaffirmed or repealed the policy, and these decisions have uniformly fallen along partisan lines^{2,3}.

Within days of taking office, Presidents Clinton, Bush, and Obama all issued executive orders reversing their predecessor's position on the policy^{2,3}. This pattern suggests that decisions about this policy have more to do with politics than the actual effects of the policy itself. The MCP is neither a rational response to a demonstrated public health need nor an effective strategy to reduce the number of abortions worldwide². It has become a political tool used by both parties to appease their respective political bases and quickly differentiate the new administration from the outgoing party². The problem with this approach is that changes in foreign aid policies have real consequences outside of domestic politics in the United States.

In many developing countries, the internal capacity to support a functional health care system is so poor that citizens are dependent on health care services subsidized by outside donors⁴. According to data from the Organization for Economic Cooperation and Development (OECD), donations from the US for reproductive health care and family planning totaled more

than one billion dollars in 2010 and outstripped contributions from all other OECD nations and multilateral organizations combined⁵. As the single largest donor of aid for reproductive health in the world, even seemingly small changes in US aid policy can affect prospective beneficiaries in meaningful ways.

Although the majority of NGOs accepted US funding with the MCP's restrictions after the policy was reinstated in 2001⁶, one study found that its implementation resulted in significant declines in funding for large, international NGOs that refused to comply with the policy⁷. In some developing countries, these agencies were providing for a large proportion of the available reproductive health care services, and funding cuts required that they scale back rural outreach activities, make dramatic cuts to staff and services at clinics in high-risk communities, and give up essential technical support and supplies from USAID funded organizations⁷. Under these circumstances, it is irresponsible for the United States to make changes to reproductive health aid policies without considering the potential for unintended consequences on health outcomes in recipient nations.

Although maternal mortality is no longer a major concern in wealthy nations, it remains a pressing public health problem in developing nations. In 2010, the World Health Organization (WHO) estimated the maternal mortality ratio in sub-Saharan Africa to be 500 deaths per 100,000 live births, which translates to a 1 in 39 lifetime risk of death related to pregnancy or childbirth for women in the region⁸. This is especially striking in light of the disparity between developing nations and wealthier nations, like Sweden for example, where the lifetime risk of maternal death was just 1 in 14,000 in 2010⁸. The great majority of maternal deaths worldwide can be attributed to manageable or preventable causes, principally hemorrhage, infection, eclampsia/preeclampsia, and unsafe abortion⁹. With effective antenatal care, a skilled birth

attendant at delivery, and a health care facility with basic provisions, many of these catastrophic outcomes can be avoided¹⁰; however, even these apparently simple interventions remain out of reach for a majority of women in developing nations¹¹.

In the last few decades, the international community has prioritized maternal mortality in the international development agenda¹²⁻¹⁴. Recent studies have shown that these efforts are beginning to pay off^{8,15}. Global maternal mortality has decline significantly since 1990^{8,15}; however, an extreme disparity remains between women in wealthy and poor nations^{8,15}. Officials from the United States played an important role in establishing reproductive health and maternal mortality as priorities in global health policy², but over the last several decades, the United States' own approach to international reproductive health policy has been inconsistent⁶. The political tug-of-war over the Mexico City Policy demonstrates the need for a sustained, evidence-based strategy from the US to address global reproductive health and the problem of maternal mortality in the developing world.

The goal of this study was to add to the body of evidence on the effects of the Mexico City Policy on reproductive health outcomes by determining whether a relationship exists between the policy's reinstatement in 2001 and the odds of appropriate maternal health care in countries across the world. Specifically, I examined the relationship between a country's exposure to the policy and changes in the proportion of women reporting effective antenatal care and skilled birth attendance at delivery, which are important determinants of maternal mortality¹⁰. Although the findings suggest that the policy did not impede progress in maternal health on a global scale, further research will be required to assess the policy's effects within a single region or country.

Background: Evolution of the Mexico City Policy

In the 1973 *Roe v. Wade* decision, the Supreme Court struck down a Texas state law that prohibited abortions except to save a woman's life and in so doing, effectively legalized abortion in the United States.¹⁶ The decision galvanized a fierce opposition movement that responded with an extensive legislative agenda designed to restrict access to and funding for abortion services². One such measure was the 1973 Helms amendment to the US Foreign Assistance Act, which governs the US Agency for International Development (USAID). The amendment effectively prohibits the use of foreign aid funds to pay for abortion services directly^{2,17}. The Helms amendment serves as an important backdrop to a discussion of the Mexico City Policy (MCP) because unlike the MCP, it has remained in effect without interruption since 1973. As a result, the primary effect of the MCP has not been on the funding of abortion services but rather on the funding of an organization's other health services^{6,18}.

In 1984, at the fourth United Nations population conference, the Reagan administration unveiled what would come to be known as the Mexico City Policy in honor of the conference's host city^{1,2}. The policy states that any NGOs working outside the US are ineligible for US family planning aid if they use funds *from any source* to either perform abortions, provide counseling or referrals for safe abortion services, or lobby for legalization and/or improved access to abortion services². These restrictions apply to both foreign NGOs and NGOs based in the United States that work internationally but not to aid for foreign governments². The first part of the policy takes the Helms amendment one step farther by eliminating funding for entire organizations rather than simply regulating the *use* of US funds; however, the policy goes farther still by preventing US funded organizations from providing any information about safe abortion services and restricting their engagement in advocacy. Because these last two provisions police the

speech of health care providers and would-be reproductive rights activists, the policy's opponents dubbed it 'the Global Gag Rule'¹.

In the most recent version of the policy, enacted by President Bush in 2001, some abortion related activities are permitted, including post-abortion care, abortion related research, and the provision of emergency contraception, which is not considered abortion by USAID². Officially, the policy also allows US funded organizations to provide abortions in the case of rape, incest, or threat to the life of the woman and to answer specific questions from pregnant women about how to obtain safe, legal abortions¹⁹. In practice, however, studies have shown that recipient organizations are often reticent to provide any abortion related information or services out of fear of losing their funding^{19,20}.

Since the policy was originally enacted in 1984, it has remained contentious, and each executive order changing the policy has been followed by a barrage of legislative efforts seeking either to challenge the President's position or cement it². So far, these efforts have been successful only once¹. In 1999, President Clinton agreed to a diluted version of the Mexico City Policy in exchange for over one billion dollars owed to the UN Population Fund, but the MCP provision was later dropped in 2000^{1,3}. More recently, both sides proposed amendments to the State Department appropriations bills for Fiscal Years 2012 and 2013.^{21,22} Although these amendments have not been successful, they speak to the very active nature of the debate over this policy. With such a controversial issue, it seems unlikely that meaningful progress can be made on ideological grounds, which highlights the need for research on the effects of the policy on reproductive health aid recipients. This study contributes to that research by examining changes in national maternal health outcomes data differentiated by their exposure to the MCP.

One recent study, reviewed in the next section, offers a novel approach to making such an assessment, and I have structured a complementary analysis here.

The Mexico City Policy in the Literature: A Systematic Review

Much has been written about the Mexico City Policy since it was originally enacted in 1984 by the Reagan administration; however, a rigorous analysis of the utility of any policy must look past the rhetorical or theoretical arguments and attempt to identify the meaningful downstream effects of the policy. In the case of this policy, it is essential to examine the existing evidence with the following question in mind: “Does the Mexico City Policy negatively affect indicators of reproductive health among women in countries receiving aid for family planning and reproductive health from the United States?” While there is some evidence of the policy’s effects on reproductive health funding and health care systems⁷, there is a shortage of evidence of the policy’s effects on reproductive health outcomes.

Evidence indicates that other policies restricting access to safe abortion services results in harm to reproductive health by increasing morbidity and mortality related to unsafe abortion²³⁻²⁵. The loss of family planning funding and services has also been documented in countries throughout the world as a result of the implementation of the MCP^{1,7,20,23,26}. In addition, several sources have demonstrated that the losses in family planning services have a negative effect on services in other public health initiatives, including HIV/AIDS prevention, post-abortion care programs, safe motherhood, and access to primary health care^{2,7,20,23,27}. These are important findings, but many of them concern proximal determinants of health rather than actual health outcomes. It is essential to identify any evidence of a relationship between the MCP and any downstream reproductive health outcomes.

Review of the Literature

In order to identify existing evidence of the effects of the Mexico City Policy on reproductive health outcomes, I conducted a systematic review of the literature in four databases,

yielding 373 abstracts for review and 10 related articles for hand search of the references. (See Appendix 1 for detailed search strategy and systematic review outcomes table). This search identified only one study that investigated the explicit effects of the policy on any reproductive health outcome: Bendavid *et al.* used Demographic and Health Survey (DHS) data (see Methods section for detailed description of data) from women in twenty sub-Saharan African countries to determine whether the reinstatement of the MCP in 2001 had an effect on the probability of induced abortion among women in the region²⁸. They found that women in countries that received a high level of financial support for family planning and reproductive health care during the Clinton administration had greater odds (Adjusted OR 2.55, 95% CI: 1.76 – 3.71) of induced abortion after the policy was reinstated than before. They also found that for each additional year under the policy women had 1.21 (95% CI: 1.10 – 1.37) times the odds of having an induced abortion. The overall quality of this study is very good, especially given the inherent difficulty of connecting an international policy change to outcomes at the level of individual women.

The investigators measured induced abortion using DHS data on pregnancies that ended early. They then classified abortions as either ‘induced’ or ‘spontaneous’ based on a validated WHO algorithm that incorporates individual factors about the women and the circumstances of the pregnancy. In order to measure exposure to the policy, the investigators devised a novel measure based on financial assistance data from the Organization for Economic Cooperation and Development (OECD). Exposure to the policy was quantified by measuring the amount of reproductive health aid received by a given country from the United States during the period when the policy was not active. The rationale for this approach was that countries receiving a relatively high degree of aid during the period when the policy was not in effect would be more vulnerable to a change in aid policy. They validated this measure of exposure by repeating their

analyses using similar financial assistance data from USAID. The investigators then used logistic regression models to determine the relationship between the exposure and the outcome while controlling for a number of potentially confounding individual and country variables.

The work of these investigators is commendable in many ways. It is the first effort to quantify the effect of the MCP on the health of potential aid beneficiaries. The investigators provide the reader with a meticulous explanation of their methods and rationale, making a critical appraisal of their techniques and findings much more straightforward. They also undertook a very thorough investigation of the potential sources of bias and made great efforts to minimize bias whenever possible. As a part of a rigorous assessment of the remaining potential for bias in their final models, they also conducted a number of secondary analyses that increase the reader's confidence in their findings. Finally, both their modeling strategy and their creative use of a number of available data sources were quite elegant and allowed them to effectively model a very complex relationship.

There are also some weaknesses in this study. Clearly, in this type of policy analysis the investigators are not able to define the 'high' and 'low' exposure groups. Countries receive differing levels of financial aid for a variety of reasons, and there is a strong likelihood of systematic differences between the women and countries in the two groups. Although the investigators made efforts to control for potentially confounding variables in their final models, it would be very difficult to devise a model that could effectively control for all the characteristics and contexts that can influence access to abortion services. Another issue is that the majority of the countries in their study contributed data from only one survey, so their results could have been strengthened if repeated cross-sectional data were available for all countries in their analysis. Because of the high likelihood of systematic differences between countries and the

changing contexts overtime, using data from both before and after the reinstatement of the policy in all countries would add considerable strength to their findings. Finally, it is important to remember that using data from the available DHS surveys in a region does not guarantee a representative sample of the entire region. There are likely to be systematic differences between countries with and without available DHS data, and it is impossible to know the effects of excluding the countries where DHS surveys have not be conducted.

Rather than identifying major methodological problems in the Bendavid *et al.* study, many of these issues point to the challenges inherent to the study of abortion and international policy. Given the constraints of this work, this group of investigators did an excellent job of characterizing the relationship between the MCP and the rate of induced abortion in sub-Saharan Africa. Their study is an important first step toward building a body of evidence that describes the effects of this policy on reproductive health outcomes.

Methods

Antenatal Care and Skilled Birth Attendance Data

I used repeated cross-sectional data on antenatal and delivery care collected by MEASURE Demographic and Health Surveys (hereafter DHS) to examine the prevalence and adequacy of antenatal care and the prevalence of skilled birth attendance at deliveries. These household surveys provide standardized, nationally representative data on maternal and child health indicators gathered from women ages 15-49 years¹ in developing nations²⁹. In some countries, survey respondents are restricted to married women only. The surveys are implemented by ICF international in collaboration with in-country agencies²⁹.

I used data from all publically available (as of May 30, 2012), unrestricted surveys conducted between 1994² and 2008 with individual data on antenatal and delivery care. I specifically selected countries with repeated surveys with at least one survey from the period prior to the 2001 reinstatement of the Mexico City Policy (1994 – 2000) and at least one survey from the period after the 2001 reinstatement of the policy (2001 – 2008). Based on these criteria, I included data from 98 surveys conducted in 37 countries in this analysis, representing data from 251,602 women who reported having a birth during the 12 to 24 months prior to the completion of the survey fieldwork. I established this sample by capturing all women who reported a birth in the calendar year of the survey as well as the full calendar year prior to the year of the survey. In a few cases, the survey data included births that were recorded as occurring after the completion date of the survey fieldwork. Because I assumed these to be either recorded in error

¹ Surveys from Columbia in 2005; Nigeria in 1999; and Bangladesh in 1996-1997, 1999-2000, and 2004 also included data from girls aged 10-14 years. These data were also included in the analysis.

² Because DHS survey questions inquire about pregnancies and births in the years preceding the survey, surveys conducted in 1993 were excluded because they would include data from the period prior to the repeal of the Mexico City Policy in January 1993.

or included in the dataset in error (as in the case of Peru’s Continuous DHS V survey from 2004 – 2006), I did not include women reporting these births in the sample. See Appendix 2 for a listing of all countries and surveys included in this study.

The WHO defines a skilled attendant as “...an accredited health professional – such as a midwife, doctor, or nurse – who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth, and the immediate postnatal period, and in the identification, management, and referral of complications in women and newborns”³⁰. Because distinctions between health professionals and approaches to training vary between countries, standardization of the concept of skilled birth attendant is not straightforward. For this analysis, only doctors, nurses, and midwives were considered to be skilled birth attendants, following the standard set out by the UN for measurement of progress on Millennium Development Goal 5³¹. I operationalized the variable for skilled birth attendant using DHS data on the type of delivery attendant reported by the respondent at her most recent birth.

The WHO defines the standard for effective antenatal care as follows: “All pregnant women should have at least four antenatal care (ANC) assessments by or under the supervision of a skilled attendant. These should, as a minimum, include all the interventions outlined in the new WHO antenatal care model and be spaced at regular intervals throughout the pregnancy, commencing as early as possible in the first trimester”³². I operationalized the variable for effective antenatal care using DHS data on the timing of the first antenatal care visit for a respondent’s most recent pregnancy, the total number of antenatal care visits during her most recent pregnancy, and the type of antenatal care provider she saw. See Appendix 4 for a catalog of the variables used for this analysis and all variable transformations.

Exposure to Mexico City Policy

Following Bendavid's validated method for quantifying exposure to the Mexico City Policy, I used data from the Creditor Reporting System of the OECD⁵ on the amount of financial assistance provided by the United States to the countries identified for study based on available DHS data²⁸. Using the OECD data on the total financial assistance from the United States for family planning and reproductive health care between 1995-2000 (data prior to 1995 were not available) and population estimates for each country from the United States Census Bureau's International Data Base³³, I calculated the mean per capita amount of financial assistance from the United States for each country during the period when the MCP was not in effect. I then used this data as a continuous measure of exposure to the policy. I also used the mean per capita financial assistance figures to create a dichotomous variable for high and low exposure to the MCP, and I classified the DHS respondents according to whether their country of residence was above or below the median level financial assistance. See Appendix 3 for the total and per capita US aid figures for family planning and reproductive health care between 1995 – 2000.

Statistical Analysis

Because certain characteristics influence an individual's uptake of antenatal care and skilled birth attendance^{34,35}, I began by presenting descriptive characteristics of respondents, according to region and country. For continuous variables, such as years of age and years of education, I reported mean values and standard deviations (SD). After confirming that a continuous variable was normally distributed, I used a one-way ANOVA to test for significant differences between respondents in different countries in each region. Responses for one continuous variable – years of education in the sub-Saharan African region - were significantly skewed. For this variable, I reported median values and interquartile ranges (IQR), and I used a Kruskal-Wallis test to identify significant differences in years of education between countries.

For categorical variables, such as place of residence, I reported proportions and used Pearson's chi-square tests to identify significant differences between respondents from different countries. Because of the large sample population used in this analysis, statistically significant differences in respondent characteristics were identified frequently and at times did not correspond to meaningful differences between respondents from different countries. All p values reported throughout the results are two-sided, and the alpha levels are set at 0.05, 0.01, and 0.001 and reported accordingly in the tables.

Because some characteristics of a respondent's country of residence are also likely to influence her access to antenatal and delivery care independent of her individual characteristics, I also described some of the relevant country specific characteristics, including total population, life expectancy, and per capita Gross Domestic Product (GDP). I collected total population estimates from the US Census Bureau International Data Base³³ and reported mean population values by country and region for the period from 1994 to 2008. I collected data on life expectancy and per capita GDP from The World Bank World DataBank³⁶ and reported the mean values for the period from 1994 to 2008. In order to account for the potential effect of other sources of financial assistance for family planning and reproductive health care, I also reported data on the mean per capita financial assistance for these activities from all other OECD countries and multilateral organizations⁵. The data on other sources of financial assistance is reported for both the period when the MCP was active (1995-2000 - no data available prior to 1995) and when it was inactive (2001-2008). To account for the potential effect of changes in a country's fertility rate on access to antenatal and delivery care, I reported data on total fertility rates (TFR) from the UN Population Division World Fertility 2008 report³⁷. TFR is defined in this report as "the mean number of children a woman would have by age 50 if she survived to

age 50 and were subject, throughout her life, to the age-specific fertility rates observed in a given year^{33,37}.

In order to examine the raw, unadjusted differences in maternal health outcomes between the period when the MCP was active (2001-2008) and when it was inactive (1994-2000), I conducted bivariate analysis on five indicators of outcomes of antenatal and delivery care. The delivery care outcome was the reported proportion of births attended by a skilled birth attendant. The antenatal care outcomes were the reported timing of the first antenatal care visit, the reported number of antenatal care visits during the pregnancy, the provision of antenatal care by a skilled attendant, and an antenatal care index variable indicating whether a woman reported that she had all three of these elements of effective antenatal care during her pregnancy. I reported weighted proportions for the period when the policy was active and inactive according to country and region, and I used Pearson's chi-square tests to identify significant differences between survey respondents from each time period within each country and region. Because this dataset comprises pooled data from multiple surveys, I used DHS sample weight variables in these calculations to account for the potential effect of changes in sampling strategies between surveys.

In order to more specifically investigate the potential relationship between the MCP and changes in the maternal health outcomes of interest, I used four logistic regression models to estimate how the odds of having effective antenatal care or skilled birth attendance at delivery were affected by both the status of the MCP (either active or inactive) and the degree of exposure to the policy (either high or low). This approach allowed me first to assess the difference in the odds of these maternal health outcomes before and after the Mexico City Policy was reinstated in 2001, and then, in subsequent models, I was able to assess the odds of effective antenatal care and skilled birth attendance among women living in high exposure countries compared to those

living in low exposure countries as the policy was reinstated. First, I ran each of the models on the entire sample as a whole to generate global estimates of the effect of the policy, and then I ran each model again among respondents from each of the four regions. I used the DHS sample weight variables in all the models in order to account for any changes in sampling strategies between surveys that might affect the representation of different groups within the dataset.

For the four logistic regression models, I used two main dependent variables and one main independent variable. The first dependent variable – used in two out of four models – was an indicator denoting that the respondent reported having effective antenatal care during her recent pregnancy, meaning that she reported at least four antenatal care visits, the first of which was initiated in the first trimester, and care provided by a skilled attendant. The second dependent variable – used in the remaining two models – was the respondent’s report of a skilled birth attendant at her delivery. The independent variable used in all four models was an indicator derived from the year of the survey, denoting the status of the MCP (either active or inactive) at the time of the pregnancy and delivery. The first two models examined the relationship between the dependent variables and the independent variable among all respondents, regardless of their exposure to the MCP. The subsequent models examined the relationship between the dependent variables and the independent variable among respondents from high exposure countries and from low exposure countries separately. By controlling for the country of residence in the policy exposure variable and the year of the survey in the policy status variable, I hope to control for a number of significant country characteristics and contexts that the data do not measure, such as internal conflicts or the status of diplomatic relations.

In these models, an odds ratio of less than one would suggest that women who became pregnant after the MCP was reinstated in 2001 had lower odds of having either effective

antenatal care or skilled birth attendance compared to women who became pregnant prior to the policy's reinstatement. In the adjusted analyses, I controlled for both the individual respondent's characteristics and the characteristics of the respondent's country of residence. Individual characteristics used in the final regression models include age, years of education, marital status, parity, and place of residence (urban vs. rural). Country characteristics used in the final models include population, life expectancy, per capita GDP, TFR between 1990 and 2000, TFR between 2000 and 2008, and mean per capita aid for family planning and reproductive health care from all non-US OECD nations and multilateral organizations combined. Respondents with missing values for any of the variables were not included in the models. In some of the regional models, the statistical analysis software omitted some country characteristic variables that were found to be collinear with other variables in the model, and I have indicated which variables have been dropped where relevant in the results tables. More variables were dropped in regions with fewer countries represented in the sample, such as the North Africa, Central Asia, and Eastern Europe region. I reported adjusted and unadjusted odd ratios and associated 95% confidence intervals for all models. All statistical analyses were conducted using Stata statistical analysis package, version 12 (StataCorp LP, Texas, USA). This study was exempted from Institutional Review Board approval by the University of North Carolina's Office of Human Research Ethics.

Results

This study included data from 98 DHS surveys conducted in 37 different countries between 1994 and 2008, representing 251,602 women who reported having a birth during the 12 to 24 months prior to the completion of the survey fieldwork. Overall, the results of the analysis of the survey data suggest that access to antenatal and delivery care improved over time in many parts of the world. The results indicate that a higher degree of financial support for reproductive health between 1995 – 2000 promoted faster progress on maternal health outcomes regardless of the reinstatement of the Mexico City Policy in 2001. Women in sub-Saharan Africa, however, do not appear to have benefited from similar progress in maternal health.

In Table 1, I present aggregated descriptive characteristics for the sample population from 1994 through 2008, according to the respondent's country and region of residence. Overall, the mean age of the respondents was 26.9 years (SD: 6.6). Most respondents (77.7%) identified themselves as married; however, in some countries, only married women are included in the survey, which may dampen the effect of the marital status variable in subsequent analyses. The majority of respondents lived in rural areas (67.1%) and reported a history of only three or fewer births (62.4%); however, the proportions of women living in rural areas (74.4%) and reporting a history of 4 or more births (46.5%) were especially high in sub-Saharan Africa. The mean years of education for the sample overall was very low at 4.7 years (SD: 4.7). Although respondents from all regions reported relatively low levels of education, the lack of education was particularly pronounced among respondents from sub-Saharan Africa, where the data were highly skewed as a result of the overwhelming number of women reporting no education at all.

In addition to individual respondent characteristics, certain characteristics of a country are likely to influence a respondent's access to antenatal and delivery care, and I present some of

these in Table 2. These characteristics highlight a number of important regional differences. The mean life expectancy between 1994 and 2008 was highest in the Latin America and the Caribbean region at 71.8 years and lowest in sub-Saharan Africa at 50.6 years. The mean per capita GDP from 1994 to 2008 ranged from a high of \$2977.84 in Columbia to a low of \$158.13 in Ethiopia, and as with mean life expectancy, Latin America and the Caribbean had the highest regional mean per capita GDP at \$4564.24 and sub-Saharan Africa had the lowest at \$689.92. According to fertility data from the UN Population Division, countries from all regions under study, except a few sub-Saharan African countries, experienced a decline in TFR between the 1990s and 2000s.

In Table 2, I also present data on foreign aid for family planning and reproductive health care provided to each country from both the United States and non-US donors, including other OECD nations and multilateral organizations. Financial assistance from the US during the period when the Mexico City Policy was not active is used as the measure of a country's exposure to the policy's reinstatement in 2001. From 1995 to 2000, the amount of mean per capita reproductive health aid from the United States ranged from a high of \$8.01 in Jordan to a low of \$0.00 in six countries: Burkina Faso, Cameroon, Chad, Columbia, Namibia, and Niger. Regionally, the North Africa, Central Asia, and Eastern Europe region received the highest amount of mean per capita reproductive health aid from the United States at \$2.49. In contrast to US aid, the highest amount of per capita reproductive health aid from non-US sources was provided to sub-Saharan Africa in both the 1990s (\$1.24) and the 2000s (\$2.25), and the lowest amount of per capita reproductive health aid was provided to the North Africa, Central Asia, and Eastern Europe region in both the 1990s (\$0.34) and the 2000s (\$0.23). These differences highlight the complex nature of foreign aid decisions. It is also important to note that financial

assistance for family planning and reproductive health care from non-US sources increased substantially between the 1990s and 2000s. This increase reflects a growing interest in reproductive health and global health in the last several decades, and it may be an important contributing factor in the recent advances in maternal health observed in many regions¹³.

In Table 3, I present the results of the bivariate comparisons of antenatal and delivery care outcomes between the period when the MCP was inactive (1994-2000) and when it was active (2001-2008). These comparisons demonstrate two important points about the data. First, in all regions except sub-Saharan Africa, indicators of antenatal and delivery care have uniformly improved over time. In regions that began with comparatively high reported proportions of skilled birth attendance and effective antenatal care – like the Latin America and Caribbean region and the North Africa, Central Asia, and Eastern Europe region – the majority of countries were still able to achieve significant improvements in both outcomes between 1994 – 2000 and 2001 – 2008. Likewise, in the South and Southeastern Asia region, where reported proportions of effective antenatal care and skilled birth attendance began at much lower levels, all countries made substantial, statistically significant gains in terms of both outcomes between 1994 – 2000 and 2001 – 2008. These regional comparisons also highlight the importance of interpreting the degree of change in these outcomes in the context of their initial value in the 1994 – 2000 period.

The second important observation about the simple bivariate comparisons is that they do not reveal any obvious relationship between progress on maternal health outcomes and exposure to the MCP. In all regions except sub-Saharan Africa, improvements were evident regardless of the degree of exposure to the policy. Even in sub-Saharan Africa, where progress was more erratic, these comparisons do not suggest a clear relationship between a country's degree of exposure to the policy and the direction or magnitude of change in either indicator. For example,

of the seven sub-Saharan African nations that experienced a significant decrease in the reported proportions of one or both outcomes, only two countries – Guinea and Mozambique – had a high degree of exposure to the policy.

The results of the first two logistic regressions (Tables 4 and 5) reinforce the findings of the bivariate comparisons. After adjusting for both individual and country characteristics, women who reported a birth in the period when the policy was active had 1.36 (95% CI: 1.32 – 1.40) times the odds of reporting effective antenatal care (Table 4) and 1.36 (95% CI: 1.33 – 1.39) times the odds of reporting a skilled birth attendant (Table 5) compared to women who reported a birth when the policy was inactive. This pattern of improving odds over time was also evident at the regional level for both outcomes after adjusting for individual and country characteristics. The odds of effective antenatal care and skilled birth attendance were higher in some regions than others; however, in sub-Saharan Africa, the adjusted odds of effective antenatal care (OR: 1.31, 95% CI: 1.25 – 1.36) showed some improvement over time and the odds of skilled birth attendance (OR: 1.12, 95% CI: 1.08 – 1.15) made very slight progress. Together these results serve as further evidence of the improved odds of having access to high-quality antenatal and delivery care between 1994 – 2000 and 2001 – 2008 in most parts of the world. The results also demonstrate that women in sub-Saharan African countries have not benefited from the same degree of progress as have women in other regions.

By repeating these two regression models among respondents from high and low exposure countries separately, we can begin to examine the effects of the MCP distinct from the effects of progress over time. Among respondents from all the high exposure countries globally, women who reported a birth during the period when the policy was active had 2.04 (95% CI: 1.96 – 2.12) times the odds of reporting effective antenatal care (Table 6) and 1.72 (95% CI: 1.67

– 1.78) times the odds of reporting a skilled birth attendant (Table 7) compared to women who reported a birth when the policy was inactive. Among women from all low exposure countries, however, the odds of effective antenatal care (OR: 1.09, 95% CI: 1.05 – 1.12) or a skilled birth attendant (OR: 1.12, 95% CI: 1.09 – 1.16) improved only slightly between the two time periods.

These results suggest that countries with a lower degree of financial support for reproductive health between 1995 and 2000 made slower progress on maternal health outcomes over time than did countries with a relatively higher degree of financial assistance from the United States during that time. A higher degree of financial support seems to have promoted progress on maternal health outcomes regardless of the change in aid policy in 2001. It is not clear from these data if the change in policy blunted the potential degree of improvement that a high exposure country may otherwise have achieved; however, it is clear that any negative effects from the Mexico City Policy were not sufficient to outweigh the overall positive effect of US financial support for reproductive health.

Many of the global trends are also born out at the regional level. In most regions, the odds of effective antenatal care and skilled birth attendance improved over time, and countries that received a higher degree of financial support from the United States between 1995 and 2000 made comparatively more progress. Although this pattern is evident in both outcomes, these effects were more pronounced and consistent for effective antenatal care than for skilled birth attendance. In sub-Saharan Africa, however, the positive effect of greater financial support on the odds of effective antenatal care is less significant than in other regions. Sub-Saharan Africa also demonstrates a unique and important break from the global trend in skilled birth attendance. Among both high and low exposure countries in sub-Saharan Africa, there was no significant improvement in the odds of skilled birth attendance at delivery over time.

These results reinforce the findings from the first models that suggest that despite a global tendency toward improved maternal health outcomes over time, sub-Saharan African countries have not advanced to the same degree as have countries in other regions. Furthermore, these results suggest that a higher degree of financial support from the United States between 1995 and 2000 was not able to promote the same degree of progress in maternal health outcomes in sub-Saharan Africa as in other regions. It is not clear based on these results whether the stagnation in maternal health observed in sub-Saharan Africa is related to the 2001 change in reproductive health aid policy. Many complex variables are at play, and I have only been able to adjust for a small fraction of them in these models. The regional characteristics described in Tables 1 and 2 suggest that sub-Saharan African countries have a lower capacity to support a high-quality maternal health care system compared to other regions, and this lower capacity may have contributed to making countries in the region both less equipped to effectively use the aid money and more vulnerable to a change in US aid policy.

Overall, the results of this analysis suggest that access to antenatal and delivery care improved over time in most parts of the world. The results also suggest that a higher degree of financial support for reproductive health between 1995 and 2000 resulted in faster progress on maternal health outcomes in many parts of the world. In sub-Saharan Africa, however, similar progress on maternal health outcomes was not achieved. The results of this analysis do not clearly elucidate the relationship between the Mexico City Policy and maternal health outcomes; however, the results do suggest that countries with more resources and greater capacity are better able to use reproductive health aid to achieve sustainable progress on maternal health outcomes and are more capable of creating the infrastructure that can withstand restrictive policy changes.

Discussion and Conclusion

As the single largest donor of reproductive health aid in the world, the United States wields considerable influence over the global reproductive health policy agenda and as a result, over the health of many of the world's most vulnerable women. This influence demands accountability from policy makers in the United States. Regardless of one's political affiliation or personal views on abortion, it is essential to understand that the effects of the Mexico City Policy extend beyond the issue of abortion. At this point, there is clear evidence that the policy has harmed the reproductive health infrastructure in a number of countries⁷ and has contributed to an increase in the rate of induced abortion in sub-Saharan Africa²⁸ both of which may increase maternal mortality. Although the present study was not able to identify a negative influence of the Mexico City Policy on access to antenatal and delivery care, these results should not be considered definitive evidence that the policy has no effect on maternal health outcomes.

The present study was designed to detect global and regional effects of the policy; however, this approach may have been overly ambitious. Thus far, the documented effects of the MCP on reproductive health infrastructure have been primarily isolated to rural areas and particularly high-risk countries.^{1,2,7} A study designed to look more closely at the effects of the policy in a specific region or country may have been able to detect changes in maternal health outcomes that are not apparent on a global scale. This study does demonstrate that sub-Saharan African countries have not made substantial progress on maternal health compared to that of developing countries in other parts of the world. While this situation cannot be attributed to the MCP, it suggests that countries in sub-Saharan Africa may be more vulnerable to a change in US aid policy. As a result, these countries may have experienced more harm from the policy's implementation than did countries in other regions. This may be because many of the sub-

Saharan African nations lack the resilience to withstand donor policy changes. The data from this study are not, however, sufficient to make that determination. Future studies focusing on sub-Saharan Africa or a specific demographic group or geographical region within a single country may be able to identify more nuanced effects of the policy on maternal health outcomes.

The results of the present study also indicate that in most parts of the world, a higher level of financial support between 1995 and 2000 improved the odds of antenatal and delivery care in the years that followed. This finding is in contrast to my original hypothesis that a high level of exposure to the policy would increase a country's risk for negative maternal health outcomes after the policy's reinstatement in 2001; however, the results seem to suggest a more intuitive and encouraging relationship between reproductive health aid and maternal health outcomes. Many resource poor countries can make effective use of financial assistance for reproductive health even when donor restrictions are applied. Because a majority of reproductive health NGOs elected to accept US funds after the MCP restrictions were reinstated, implementation of the policy did not result in widespread loss of services in most parts of the world⁶. Furthermore, for agencies that elected to accept US funds, the MCP's restrictions applied to abortion related services, which may not have directly influenced antenatal or delivery care. These observations suggest that organizations that accepted USAID funds would have experienced few changes in their maternity care services, allowing them to use the funds to improve antenatal and delivery care.

In contrast to countries in other regions, the results of this study indicate that a higher degree of financial assistance was not able to promote faster progress in achieving maternal health goals in sub-Saharan Africa. Whether exposure to the MCP was high or low, progress on antenatal and delivery care in countries in the region stagnated in the interval between 1994 –

2000 and 2001 – 2008. The results of this study do not provide much insight into why the countries in this region were unable to make effective use of financial assistance for reproductive health. Because little progress was observed in both high and low exposure countries, it seems unlikely that the reinstatement of the MCP had a major effect on access to antenatal and delivery care in the region. The concentration of extreme public health problems along with the often limited internal capacity of sub-Saharan African nations to address these crises are likely to be more important contributing factors. Although this study was not able to identify a regional effect of the Mexico City Policy on maternal health, future studies focusing on this region or on specific countries within the region may be better able to parse out the effects of the policy on maternal health outcomes.

This study is the first effort to study the effects of the Mexico City Policy on indicators of maternal health. The findings suggest that the Mexico City Policy did not impede progress on maternal health outcomes in most parts of the world. Greater proportions of women across the world now have access to effective antenatal care and skilled birth attendance than was true two decades ago. The lack of apparent progress in access to these services in sub-Saharan Africa is troubling, and US policy makers should make every effort to craft reproductive health aid policy that will improve this situation. In the case of the Mexico City Policy, further evidence is needed to determine the effects of this policy on maternal health in sub-Saharan Africa. Until more evidence is available, policy makers should consider the potential unintended consequences of reinstating this policy very carefully.

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Table 1a: Characteristics for DHS respondents from the Latin America and Caribbean region with a birth reported in the 12-24 months prior to the completion date of the survey, 1994 – 2008^{a,b}

	Latin America & Caribbean Region (n=44,639)	Bolivia (n=7511)	Columbia (n=6143)	Dominican Republic (n=8384)	Haiti (n=3780)	Nicaragua (n=4235)	Peru (n=14586)
Mean Age in years (St. Dev) ***	26.7 (6.9)	27.5 (7.0)	25.8 (6.5)	24.8 (6.0)	28.0 (7.1)	25.3 (6.7)	27.9 (7.0)
% Rural ***	48.8	49.8	32.0	43.8	68.9	55.9	51.0
Mean years of education (St. Dev) ***	6.6 (4.5)	6.5 (4.5)	7.4 (4.0)	7.7 (4.4)	3.1 (3.4)	4.8 (4.0)	7.0 (4.4)
% Currently Married ***	35.4	51.4	22.9	14.8	71.8	30.0	36.4
% with 4 or More Births ***	30.7	39.3	19.3	20.9	42.2	32.4	33.3

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author, see Appendix 4.

DHS, Demographic and Health Survey

^a For continuous characteristics, one-way ANOVAs were used to test for significant differences between countries, and the Pearson's chi-square tests were used for between country comparisons for categorical characteristics

^b All reported means and proportions are unweighted

***p<0.001, **p<0.01, *p<0.05

Table 1b: Characteristics for DHS respondents from the North Africa, Central Asia, and Eastern European region with a birth reported in the 12-24 months prior to the completion date of the survey, 1994 – 2008^{a,b}

	North Africa, Central Asia, and Eastern Europe Region (n= 20,494)	Armenia (n= 1064)	Egypt (n=12288)	Jordan (n=7142)
Mean Age in years (St. Dev) ***	27.5 (6.0)	25.1 (5.0)	26.9 (5.8)	29.0 (6.0)
% Rural ***	50.5	44.0	62.5	30.9
Mean years of education (St. Dev) ***	8.1 (5.4)	10.3 (2.8)	6.7 (5.8)	10.3 (4.1)
% Currently Married ***	99.2	97.8	99.1	99.6
% with 4 or More Births ***	32.6	7.0	28.1	44.4

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author, see Appendix 4.

DHS, Demographic and Health Survey

^a For continuous characteristics, one-way ANOVAs were used to test for significant differences between countries, and the Pearson's chi-square tests were used for between country comparisons for categorical characteristics

^b All reported means and proportions are unweighted

***p<0.001, **p<0.01, *p<0.05

Table 1c: Characteristics for DHS respondents from the South and Southeastern Asia region with a birth reported in the 12-24 months prior to the completion date of the survey, 1994 – 2008^{a,b}

	South & South-eastern Asia Region (n=67,810)	Bangladesh (n=5982)	Cambodia (n=4082)	India (n=26,676)	Indonesia (n=17,820)	Nepal (n=5272)	Philippines (n=6288)	Vietnam (n=1690)
Mean Age in years (St. Dev) ***	26.3 (6.1)	23.9 (6.0)	28.8 (6.9)	25.0 (5.3)	27.8 (6.3)	25.7 (6.1)	28.4 (6.5)	27.2 (5.7)
% Rural ***	71.2	73.5	83.9	69.2	69.5	88.3	57.9	80.3
Mean years of education (St. Dev) ***	5.4 (4.8)	4.0 (4.0)	2.9 (2.9)	4.7 (5.0)	7.2 (4.3)	1.8 (3.3)	9.1 (4.2)	7.0 (3.7)
% Currently Married ***	96.7	98.7	96.5	98.9	98.4	99.5	77.4	98.4
% with 4 or More Births ***	28.0	25.4	40.7	25.0	27.4	34.4	35.3	12.5

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author, see Appendix 4.

DHS, Demographic and Health Survey

^a For continuous characteristics, one-way ANOVAs were used to test for significant differences between countries, and the Pearson's chi-square tests were used for between country comparisons for categorical characteristics

^b All reported means and proportions are unweighted

***p<0.001, **p<0.01, *p<0.05

Table 1d: Characteristics for DHS respondents from the sub-Saharan Africa region (Benin – Malawi) with a birth reported in the 12-24 months prior to the completion date of the survey, 1994 – 2008^{a,b}

	sub-Saharan African Region (n=118,659)	Benin (n=9407)	Burkina Faso (n=5014)	Cameroon (n=3375)	Chad (n=4050)	Ethiopia (n=5756)	Ghana (n=3174)	Guinea (n=3808)	Kenya (n=3417)	Mada-gascar (n=3517)	Malawi (n=6681)
Mean Age in years (St. Dev) ***	27.3 (6.9)	27.9 (6.5)	28.1 (7.2)	25.9 (6.6)	26.2 (6.6)	27.7 (6.8)	28.7 (6.8)	27.7 (7.2)	26.5 (6.5)	26.9 (7.1)	26.2 (6.7)
% Rural ***	74.4	67.0	85.3	63.2	60.3	85.7	71.8	77.0	78.8	67.7	84.7
Median years of education (IQR) c***	0 (0-6)	0 (0-0)	0 (0-0)	5 (0-7)	0 (0-0)	0 (0-0)	3 (0-9)	0 (0-0)	7 (4.5-8)	3 (0-5)	4 (0-7)
% Currently Married ***	79.2	85.8	86.4	70.3	92.1	93.2	78.5	92.1	77.6	61.4	84.9
% with 4 or More Births ***	46.5	46.7	50.6	41.8	49.8	48.9	41.5	51.7	39.7	43.8	40.2

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author, see Appendix 4.

DHS, Demographic and Health Survey; IQR, Interquartile Range

^a For continuous characteristics, one-way ANOVAs were used to test for significant differences between countries, and the Pearson's chi-square tests were used for between country comparisons for categorical characteristics

^b All reported means and proportions are unweighted

^c Years of education distribution was skewed for sub-Saharan Africa, so the Kruskal-Wallis test was used to identify significant differences between countries.

***p<0.001, **p<0.01, *p<0.05

Table 1d Continued: Characteristics for DHS respondents from included countries in the sub-Saharan Africa region (Mali – Zimbabwe) with a birth reported in the 12-24 months prior to the completion date of the survey, 1994 – 2008^{a,b}

	Mali (n=11,017)	Mozambique (n=6016)	Namibia (n=2820)	Niger (n=4765)	Nigeria (n=13,730)	Rwanda (n=5455)	Senegal (n=5113)	Tanzania (n=5358)	Uganda (n=6281)	Zambia (n=6248)	Zimbabwe (n=3657)
Mean Age in years (St. Dev) ***	27.2 (7.1)	26.6 (7.2)	27.4 (7.0)	27.2 (7.2)	27.8 (7.0)	29.4 (6.8)	27.6 (7.0)	27.3 (6.8)	26.6 (6.6)	26.6 (6.7)	26.3 (6.7)
% Rural ***	74.2	70.0	63.4	76.3	72.6	80.4	70.8	79.6	79.8	70.4	77.3
Median years of education (IQR) c***	0 (0-0)	1 (0-4)	5 (8-10)	0 (0-0)	0 (0-8)	4 (0-6)	0 (0-0)	7 (0-7)	4 (0-7)	6 (3-7)	7 (6-10)
% Currently Married ***	94.0	17.9	24.8	96.8	93.2	49.5	93.6	77.7	68.1	82.3	81.2
% with 4 or More Births ***	53.0	41.8	29.5	55.2	48.7	47.6	47.5	45.5	49.6	45.8	31.5

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author, see Appendix 4.

DHS, Demographic and Health Survey; IQR, Interquartile Range

^a For continuous characteristics, one-way ANOVAs were used to test for significant differences between countries, and the Pearson's chi-square tests were used for between country comparisons for categorical characteristics

^b All reported means and proportions are unweighted

^c Years of education distribution was skewed for sub-Saharan Africa, so the Kruskal-Wallis test was used to identify significant differences between countries.

***p<0.001, **p<0.01, *p<0.05

Table 2a: Selected characteristics of included countries from the Latin America and Caribbean region, 1994 – 2008

	Latin America & Caribbean Region	Bolivia	Columbia	Dominican Republic	Haiti	Nicaragua	Peru
Mean Population^a	--	8,384,867	39,493,800	8,602,733	8,552,600	4,927,400	26,049,067
Mean Life Expectancy at Birth in years^b	71.8 ^c	63.3	71.2	71.1	58.8	70.1	70.7
Mean Per Capita Gross Domestic Product in USD^b	4564.24 ^c	1063.96	2977.84	2911.88	429.68	811.77	2580.57
Total Fertility Rate^d (year)^e 1990-2000 2001-2008	--	4.4 (1996) 3.6 (2006)	3.0 (1993) 2.5 (2005)	3.2 (1994) 2.6 (2005)	5.0 (1992) 4.0 (2003)	4.3 (1995) 2.7 (2005)	3.7 (1995) 2.6 (2004)
Mean per Capita Aid for FP and RHC from all non-US OECD Nations and Multilateral Organizations in USD^f 1995-2000 2001-2008	0.37 1.85	0.90 3.79	0.05 0.16	0.16 0.91	0.23 2.98	2.25 16.37	0.46 0.92
Mean per Capita US Aid for FP and RHC between 1995-2000 in USD^f	1.58	6.88	0.00	1.61	3.30	4.43	1.21
Exposure to the Mexico City Policy	High	High	Low	High	High	High	High

SOURCE: Gathered by first author from numerous sources on 06/17/2012. See notes below.

FP, Family Planning; OECD, Organization for Economic Cooperation and Development; RHC, Reproductive Health Care; USD, United States Dollars

^a Calculated from population estimates from US Census Bureau International Database (www.census.gov/population/international/data/idb/)

^b Calculated from per capita gross domestic product figures from the World Bank DataBank (databank.worldbank.org/data/home.aspx)

^c Regional data includes all countries in the region as defined by the World Bank, not just the study countries

^d Total Fertility Rate = the mean number of children a woman would have by age 50 if she survived to age 50 and were subject, throughout her life, to the age-specific fertility rates observed in a given year. Expressed as children per woman.

^e Collected from World Fertility Data 2008 from the UN Population Division (www.un.org/esa/population/publications/WFD%202008/Main.html)

^f Calculated from financial assistance data from OECD Creditor Reporting System (stats.oecd.org) and population estimates from US Census Bureau International Database (www.census.gov/population/international/data/idb/)

Table 2b: Selected characteristics of included countries from the North Africa, Central Asia, and Eastern European region, 1994 – 2008

	North Africa, Central Asia, and Eastern Europe Region	Armenia	Egypt	Jordan
Mean Population^a	--	3,026,133	66,931,533	4,901,000
Mean Life Expectancy at Birth in years^b	68.9 ^c	71.2	69.3	72.2
Mean Per Capita Gross Domestic Product in USD^b	3305.09 ^c	1181.46	1304.63	2111.10
Total Fertility Rate^d (year)^e 1990-2000 2001-2008	--	1.6 (1995) 1.4 (2006)	3.8 (1993) 3.1 (2006)	4.5 (1995) 3.6 (2005)
Mean per Capita Aid for FP and RHC from all non-US OECD Nations and Multilateral Organizations in USD^f 1995-2000 2001-2008	0.34 0.23	0.01 0.91	0.37 0.18	0.17 0.50
Mean per Capita US Aid for FP and RHC between 1995-2000 in USD^f	2.49	0.43	2.00	8.01
Exposure to the Mexico City Policy	High	Low	High	High

SOURCE: Gathered by first author from numerous sources on 06/17/2012. See notes below.

FP, Family Planning; OECD, Organization for Economic Cooperation and Development; RHC, Reproductive Health Care; USD, United States Dollars

^a Calculated from population estimates from US Census Bureau International Database (www.census.gov/population/international/data/idb/)

^b Calculated from per capita gross domestic product figures from the World Bank DataBank (databank.worldbank.org/data/home.aspx)

^c Regional data includes all countries in the region as defined by the World Bank, not just the study countries

^d Total Fertility Rate = the mean number of children a woman would have by age 50 if she survived to age 50 and were subject, throughout her life, to the age-specific fertility rates observed in a given year. Expressed as children per woman.

^e Collected from World Fertility Data 2008 from the UN Population Division (www.un.org/esa/population/publications/WFD%202008/Main.html)

^f Calculated from financial assistance data from OECD Creditor Reporting System (stats.oecd.org) and population estimates from US Census Bureau International Database (www.census.gov/population/international/data/idb/)

Table 2c: Selected characteristics of included countries from the South and Southeastern Asia region, 1994 – 2008

	South & South-eastern Asia Region	Bangladesh	Cambodia	India	Indonesia	Nepal	Philippines	Vietnam
Mean Population^a	--	134,854,200	12,509,133	1,022,851,067	216,583,800	25,082,400	83,244,867	80,190,667
Mean Life Expectancy at Birth in years^b	66.7 ^c	65.0	58.3	62.0	65.9	62.3	66.9	72.1
Mean Per Capita Gross Domestic Product in USD^b	2390.24 ^c	384.12	387.12	568.46	1113.27	258.40	1182.94	503.03
Total Fertility Rate^d (year)^e 1990-2000 2001-2008	--	3.4 (1994) 2.7 (2005)	5.6 (1994) 3.4 (2003)	3.3 (1997) 2.8 (2006)	2.8 (1996) 2.6 (2006)	4.8 (1994) 3.3 (2004)	3.8 (1996) 3.6 (2001)	2.7 (1994) 2.1 (2006)
Mean per Capita Aid for FP and RHC from all non-US OECD Nations and Multilateral Organizations in USD^f 1995-2000 2001-2008	0.72 1.12	1.08 2.04	2.22 2.86	0.66 1.18	0.30 0.26	0.99 3.78	1.16 0.38	1.24 0.82
Mean per Capita US Aid for FP and RHC between 1995-2000 in USD^f	0.24	0.63	4.78	0.09	0.11	2.06	0.83	0.01
Exposure to the Mexico City Policy	Low	Low	High	Low	Low	High	High	Low

SOURCE: Gathered by first author from numerous sources on 06/17/2012. See notes below.

FP, Family Planning; OECD, Organization for Economic Cooperation and Development; RHC, Reproductive Health Care; USD, United States Dollars

^a Calculated from population estimates from US Census Bureau International Database (www.census.gov/population/international/data/idb/)

^b Calculated from per capita gross domestic product figures from the World Bank DataBank (databank.worldbank.org/data/home.aspx)

^c Regional data includes all countries in the region as defined by the World Bank, not just the study countries

^d Total Fertility Rate = the mean number of children a woman would have by age 50 if she survived to age 50 and were subject, throughout her life, to the age-specific fertility rates observed in a given year. Expressed as children per woman.

^e Collected from World Fertility Data 2008 from the UN Population Division (www.un.org/esa/population/publications/WFD%202008/Main.html)

^f Calculated from financial assistance data from OECD Creditor Reporting System (stats.oecd.org) and population estimates from US Census Bureau International Database(www.census.gov/population/international/data/idb/)

Table 2d: Selected characteristics of included countries from the sub-Saharan African region (Benin – Malawi), 1994 – 2008

	sub-Saharan African Region	Benin	Burkina Faso	Cameroon	Chad	Ethiopia	Ghana	Guinea	Kenya	Mada-gascar	Malawi
Mean Population ^a	--	6,902,267	12,226,667	15,778,800	8,281,133	66,979,667	20,274,400	8,473,333	31,892,333	16,363,467	12,207,667
Mean Life Expectancy at Birth in years ^b	50.6 ^c	52.7	50.9	50.4	48.7	52.7	59.5	48.8	53.7	60.4	47.6
Mean Per Capita Gross Domestic Product in USD ^b	689.92 ^c	461.24	298.12	797.25	346.50	158.13	510.96	409.29	476.91	290.93	200.70
Total Fertility Rate ^d (year) ^e 1990-2000 2001-2008	--	6.3 (1994) 5.8 (2004)	6.8 (1996) 6.2 (2001)	5.2 (1996) 5.2 (2002)	6.6 (1995) 6.6 (2001)	7.6 (1994) 5.7 (2003)	4.5 (1996) 4.6 (2001)	6.0 (1996) 5.6 (2003)	4.7 (1996) 5.0 (2001)	6.1 (1995) 5.4 (2001)	6.4 (1998) 6.3 (2005)
Mean per Capita Aid for FP and RHC from all non-US OECD Nations and Multilateral Organizations in USD ^f 1995-2000 2001-2008	1.24 2.25	0.37 2.73	1.07 4.49	0.03 1.74	4.02 1.32	0.44 1.04	0.42 2.19	2.08 3.37	4.07 2.41	0.04 1.42	8.83 1.68
Mean per Capita US Aid for FP and RHC between 1995-2000 in USD ^f	0.51	0.76	0.00	0.00	0.00	0.17	0.71	2.78	0.31	1.07	1.33
Exposure to the Mexico City Policy	Low	High	Low	Low	Low	Low	Low	High	Low	High	High

SOURCE: Gathered by first author from numerous sources on 06/17/2012. See notes below.

FP, Family Planning; OECD, Organization for Economic Cooperation and Development; RHC, Reproductive Health Care; USD, United States Dollars

^a Calculated from population estimates from US Census Bureau International Database (www.census.gov/population/international/data/idb/)

^b Calculated from per capita gross domestic product figures from the World Bank DataBank (databank.worldbank.org/data/home.aspx)

^c Regional data includes all countries in the region as defined by the World Bank, not just the study countries

^d Total Fertility Rate = the mean number of children a woman would have by age 50 if she survived to age 50 and were subject, throughout her life, to the age-specific fertility rates observed in a given year. Expressed as children per woman.

^e Collected from World Fertility Data 2008 from the UN Population Division (www.un.org/esa/population/publications/WFD%202008/Main.html)

^f Calculated from financial assistance data from OECD Creditor Reporting System (stats.oecd.org) and population estimates from US Census Bureau International Database (www.census.gov/population/international/data/idb/)

Table 2d Continued: Selected characteristics of included countries from the sub-Saharan African region (Mali – Zimbabwe), 1994 – 2008

	Mali	Mozam- bique	Namibia	Niger	Nigeria	Rwanda	Senegal	Tanzania	Uganda	Zambia	Zimbabwe
Mean Population^a	10,983,533	18,392,200	1,898,467	11,541,667	128,650,267	8,454,067	9,809,800	34,505,533	25,091,133	10,645,667	11,563,467
Mean Life Expectancy at Birth in years^b	47.6	47.2	58.9	48.8	47.2	45.0	56.1	51.6	47.6	43.5	46.7
Mean Per Capita Gross Domestic Product in USD^b	320.83	256.19	2641.89	225.08	556.22	263.10	667.01	310.65	290.45	518.14	524.80
Total Fertility Rate^d (year)^e											
1990-2000	7.0 (1994)	5.6 (1995)	4.8 (1991)	7.5 (1997)	5.2 (1997)	5.9 (1999)	5.8 (1996)	5.9 (1994)	6.9 (1993)	6.1 (1994)	4.1 (1997)
2001-2008	6.7 (2004)	5.6 (2004)	3.5 (2004)	7.1 (2004)	5.7 (2002)	5.5 (2006)	5.2 (2003)	5.7 (2003)	6.8 (2004)	6.2 (2006)	3.9 (2003)
Mean per Capita Aid for FP and RHC from all non-US OECD Nations and Multilateral Organizations in USD^f											
1995-2000	0.60	0.69	2.80	0.67	0.65	0.68	0.57	1.12	0.85	1.66	2.78
2001-2008	3.02	4.32	2.68	2.99	2.32	1.51	2.45	2.42	2.23	2.55	2.71
Mean per Capita US Aid for FP and RHC between 1995-2000 in USD^f	1.26	1.88	0.00	0.00	0.11	0.25	1.58	0.60	0.63	1.83	0.44
Exposure to the Mexico City Policy	High	High	Low	Low	Low	Low	High	Low	Low	High	Low

SOURCE: Gathered by first author from numerous sources on 06/17/2012. See notes below.

FP, Family Planning; OECD, Organization for Economic Cooperation and Development; RHC, Reproductive Health Care; USD, United States Dollars

^a Calculated from population estimates from US Census Bureau International Database (www.census.gov/population/international/data/idb/)

^b Calculated from per capita gross domestic product figures from the World Bank DataBank (databank.worldbank.org/data/home.aspx)

^c Regional data includes all countries in the region as defined by the World Bank, not just the study countries

^d Total Fertility Rate = the mean number of children a woman would have by age 50 if she survived to age 50 and were subject, throughout her life, to the age-specific fertility rates observed in a given year. Expressed as children per woman.

^e Collected from World Fertility Data 2008 from the UN Population Division (www.un.org/esa/population/publications/WFD%202008/Main.html)

^f Calculated from financial assistance data from OECD Creditor Reporting System (stats.oecd.org) and population estimates from US Census Bureau International Database (www.census.gov/population/international/data/idb/)

Table 3a: Maternal health outcomes reported by DHS respondents with a birth in the 12-24 months prior to the survey during the period when the Mexico City Policy was inactive (1994-2000) and when it was active (2000-2008) in the Latin America and Caribbean region^{a,b}

	Latin America & Caribbean Region (n=44,639)	Bolivia (n=7511)	Columbia (n=6143)	Dominican Republic (n=8384)	Haiti (n=3780)	Nicaragua (n=4235)	Peru (n=14586)
% with First ANC visit in 1st Trimester							
1994-2000	49.7***	36.4***	60.6***	75.2***	39.9***	55.6	48.4***
2001-2008	65.8	53.7	66.6	79.1	44.4	56.2	68.5
% with 4 or more ANC visits							
1994-2000	57.1***	40.0***	73.4***	85.7***	36.1***	59.4***	58.5***
2001-2008	80.0	64.0	81.8	92.9	49.4	69.2	90.7
% with ANC from Skilled Birth Attendant^b							
1994-2000	69.7***	60.9***	87.3***	98.2**	67.2***	83.2	60.8***
2001-2008	89.7	80.4	92.8	96.2	74.5	85.5	94.0
% with all three elements of effective ANC							
1994-2000	38.2***	28.2***	56.6***	71.3***	24.4***	46.1**	32.7***
2001-2008	60.6	45.6	63.8	74.7	31.4	52.0	65.1
% with Skilled Birth Attendant at Delivery^c							
1994-2000	57.2***	52.8***	86.5***	96.0***	21.2***	53.3***	53.2***
2001-2008	80.3	67.7	91.5	97.4	24.2	70.8	80.4

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author -- see Appendix 4.

ANC, Antenatal Care; DHS, Demographic and Health Surveys

^a Pearson's chi-square tests were used as the test for significance for within country comparisons across the two time periods

^b All reported proportions are weighted by applying the weight variables built into the DHS datasets

^c Skilled birth attendant is considered a doctor, nurse, or midwife, according to the indicator defined by the UN for measurement of MDG 5

■ = Significant decrease from 1994-2000 to 2001-2008

■ = No significant change between 1994- 2000 and 2001-2008

***p<0.001, **p<0.01, *p<0.05

Table 3b: Maternal health outcomes reported by DHS respondents with a birth in the 12-24 months prior to the survey during the period when the Mexico City Policy was inactive (1994-2000) and when it was active (2000-2008) in the North Africa, Central Asia, and Eastern European region^{a,b}

	North Africa, Central Asia, and Eastern Europe Region (n= 20,494)	Armenia (n= 1064)	Egypt (n=12288)	Jordan (n=7142)
% with First ANC visit in 1st Trimester				
1994-2000	51.3***	46.9	41.5***	79.9***
2001-2008	71.1	49.9	61.2	87.5
% with 4 or more ANC visits				
1994-2000	52.2***	62.1***	38.8***	86.6***
2001-2008	77.3	71.8	66.8	92.8
% with ANC from Skilled Birth Attendant^b				
1994-2000	67.6***	92.0	54.6***	96.5***
2001-2008	86.1	93.6	76.3	99.0
% with all three elements of effective ANC				
1994-2000	43.2***	37.9	32.5**	74.7***
2001-2008	66.9	42.7	56.5	84.1
% with Skilled Birth Attendant at Delivery^c				
1994-2000	72.1***	97.4***	60.3***	97.5***
2001-2008	88.3	99.6	79.2	99.1

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author -- see Appendix 4.

ANC, Antenatal Care; DHS, Demographic and Health Surveys

^a Pearson's chi-square tests were used as the test for significance for within country comparisons across the two time periods

^b All reported proportions are weighted by applying the weight variables built into the DHS datasets

^c Skilled birth attendant is considered a doctor, nurse, or midwife, according to the indicator defined by the UN for measurement of MDG 5

■ = Significant decrease from 1994-2000 to 2001-2008

■ = No significant change between 1994- 2000 and 2001-2008

***p<0.001, **p<0.01, *p<0.05

Table 3c: Maternal health outcomes reported by DHS respondents with a birth in the 12-24 months prior to the survey during the period when the Mexico City Policy was inactive (1994-2000) and when it was active (2001-2008) in the South and Southeastern Asia region^{a,b}

	South & South-eastern Asia Region (n=67,810)	Bangladesh (n=5982)	Cambodia (n=4082)	India (n=26,676)	Indonesia (n=17,820)	Nepal (n=5272)	Philippines (n=6288)	Vietnam (n=1690)
% with First ANC visit in 1st Trimester								
1994-2000	38.2***	11.8***	9.2**	34.0***	58.3***	11.3***	44.9***	42.3***
2001-2008	43.0	21.6	22.2	43.2	71.4	18.8	48.4	58.6
% with 4 or more ANC visits								
1994-2000	40.1***	9.0***	8.9***	31.1***	68.0***	9.2***	60.3***	14.6***
2001-2008	44.1	19.5	29.2	36.3	79.3	20.8	71.4	31.8
% with ANC from Skilled Birth Attendant^c								
1994-2000	63.0***	25.6***	40.6***	62.0***	81.6***	25.5***	85.9**	44.0***
2001-2008	71.4	46.6	72.4	73.0	92.0	35.2	88.6	70.6
% with all three elements of effective ANC								
1994-2000	27.4***	4.6***	3.5***	22.6***	46.8***	4.6***	36.9***	9.6***
2001-2008	31.5	10.4	15.1	28.6	64.4	9.1	42.6	21.8
% with Skilled Birth Attendant at Delivery^c								
1994-2000	41.2***	10.7***	34.6***	43.8***	48.2***	9.2***	58.1***	56.7***
2001-2008	48.6	19.2	50.7	48.4	72.6	15.7	62.7	77.6

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author -- see Appendix 4.

ANC, Antenatal Care; DHS, Demographic and Health Surveys

^a Pearson's chi-square tests were used as the test for significance for within country comparisons across the two time periods

^b All reported proportions are weighted by applying the weight variables built into the DHS datasets

^c Skilled birth attendant is considered a doctor, nurse, or midwife, according to the indicator defined by the UN for measurement of MDG 5

■ = Significant decrease from 1994-2000 to 2001-2008

■ = No significant change between 1994- 2000 and 2001-2008

***p<0.001, **p<0.01, *p<0.05

Table 3d: Maternal health outcomes reported by DHS respondents with a birth in the 12-24 months prior to the survey during the period when the Mexico City Policy was inactive (1994-2000) and when it was active (2000-2008) in the sub-Saharan Africa region (Benin – Malawi)^{a,b}

	sub-Saharan African Region (n=118,659)	Benin (n=9407)	Burkina Faso (n=5014)	Cameroon (n=3375)	Chad (n=4050)	Ethiopia (n=5756)	Ghana (n=3174)	Guinea (n=3808)	Kenya (n=3417)	Mada-gascar (n=3517)	Malawi (n=6681)
% with First ANC visit in 1st Trimester											
1994-2000	15.8***	22.8***	19.1***	28.5	13.3***	4.3	37.3***	34.1***	12.5***	15.7	6.2
2001-2008	22.2	39.3	24.8	31.6	15.7	5.9	48.3	30.4	9.8	18.5	7.1
% with 4 or more ANC visits											
1994-2000	40.2**	51.7***	20.6***	48.4**	12.3***	8.5**	58.6***	46.8***	56.7***	39.1	53.9**
2001-2008	41.0	58.2	15.1	55.8	17.4	12.0	70.8	43.3	48.0	34.2	50.5
% with ANC from Skilled Birth Attendant^c											
1994-2000	65.4***	78.0***	64.1***	73.0**	22.7***	25.0*	87.9	72.3	92.3***	23.0***	90.6
2001-2008	64.1	82.9	73.4	78.4	16.4	28.3	90.4	69.5	86.2	78.1	91.8
% with all three elements of effective ANC											
1994-2000	9.9***	19.8***	10.1***	21.3*	5.1***	2.1**	31.8***	26.1***	10.5***	3.3***	5.2
2001-2008	14.1	32.6	8.8	25.6	3.6	4.0	41.8	17.6	8.0	12.0	5.9
% with Skilled Birth Attendant at Delivery^c											
1994-2000	37.6	58.5***	27.1***	52.3**	10.0***	5.7	42.2***	34.0	42.6	46.5	52.0
2001-2008	38.2	74.3	36.1	58.4	4.9	6.8	51.1	33.7	42.3	43.4	54.5

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author -- see Appendix 4.

ANC, Antenatal Care; DHS, Demographic and Health Surveys

^a Pearson's chi-square tests were used as the test for significance for within country comparisons across the two time periods

^b All reported proportions are weighted by applying the weight variables built into the DHS datasets

^c Skilled birth attendant is considered a doctor, nurse, or midwife, according to the indicator defined by the UN for measurement of MDG 5

■ = Significant decrease from 1994-2000 to 2001-2008

■ = No significant change between 1994- 2000 and 2001-2008

***p<0.001, **p<0.01, *p<0.05

Table 3d Continued: Maternal health outcomes reported by DHS respondents with a birth in the 12-24 months prior to the survey during the period when the Mexico City Policy was inactive (1994-2000) and when it was active (2000-2008) in the sub-Saharan Africa region (Mali – Zimbabwe)^{a,b}

	Mali (n=11,017)	Mozam- bique (n=6016)	Namibia (n=2820)	Niger (n=4765)	Nigeria (n=13,730)	Rwanda (n=5455)	Senegal (n=5113)	Tanzania (n=5358)	Uganda (n=6281)	Zambia (n=6248)	Zimb- abwe (n=3657)
% with First ANC visit in 1st Trimester											
1994-2000	18.4***	16.2***	27.8	12.4***	14.3***	4.1***	42.8***	10.2	14.4***	9.5***	23.8
2001-2008	25.3	16.5	27.9	11.9	15.9	7.8	54.5	11.8	15.0	16.2	20.9
% with 4 or more ANC visits											
1994-2000	24.3***	33.5***	67.3	10.4***	45.6*	9.6**	17.0***	67.0***	44.7***	67.6***	69.2***
2001-2008	31.4	52.4	69.2	14.3	43.8	12.4	39.6	49.1	42.7	59.4	63.6
% with ANC from Skilled Birth Attendant^c											
1994-2000	24.8***	68.7***	90.0**	38.1***	61.1***	93.0**	81.6***	48.0***	88.4**	91.0***	92.5
2001-2008	32.6	48.5	94.5	46.0	52.6	95.0	57.3	75.6	90.9	86.9	91.7
% with all three elements of effective ANC											
1994-2000	8.5***	10.3***	23.5	5.99***	10.0***	2.1***	11.6***	4.8**	10.1***	8.1***	21.3***
2001-2008	11.5	7.4	23.8	6.04	10.7	4.0	21.7	7.9	10.8	12.5	19.0
% with Skilled Birth Attendant at Delivery^c											
1994-2000	23.0*	37.8***	76.0**	16.8	37.5**	24.8***	46.7	35.0***	33.5	42.0	69.8
2001-2008	25.2	21.3	81.4	17.2	34.4	29.9	44.0	43.0	34.4	41.7	67.2

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author -- see Appendix 4.

ANC, Antenatal Care; DHS, Demographic and Health Surveys

^a Pearson's chi-square tests were used as the test for significance for within country comparisons across the two time periods

^b All reported proportions are weighted by applying the weight variables built into the DHS datasets

^c Skilled birth attendant is considered a doctor, nurse, or midwife, according to the indicator defined by the UN for measurement of MDG 5

■ = Significant decrease between 1994-2000 to 2001-2008

■ = No significant change between 1994- 2000 to 2001-2008

***p<0.001, **p<0.01, *p<0.05

Table 4: Adjusted and Unadjusted Odds Ratios for the Association between Effective Antenatal Care and the Status of the Mexico City Policy (active or inactive), 1994 – 2008^a

	Unadjusted OR (95% CI)	OR Adjusted for respondent characteristics (95% CI) ^b	OR Adjusted for country and respondent characteristics (95% CI) ^c
All regions, all countries	1.38 (1.35 – 1.41)	1.40 (1.37 – 1.44)	1.36 (1.32 – 1.40)
Latin America and the Caribbean	3.60 (3.33 – 3.89)	3.08 (2.84 – 3.35)	2.71 [†] (2.50 – 2.94)
North Africa, Central Asia, and Eastern Europe	3.04 (2.81 – 3.29)	2.50 (2.28 – 2.73)	2.41 [‡] (2.20 – 2.65)
South and Southeastern Asia	1.48 (1.41 – 1.55)	1.37 (1.30 – 1.44)	1.75 [§] (1.65 – 1.85)
sub-Saharan Africa	1.00 (0.96 – 1.03)	1.05 (1.02 – 1.09)	1.31 (1.25 – 1.36)

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author - see Appendix 4.

OR, odds ratio; CI, Confidence Interval; DHS, Demographic and Health Surveys

^a All logistic regression models were run using the sample weight variables built into the DHS datasets

^b Includes controls for age, place of residence (rural vs. urban), years of education, marital status, and multiparity

^c Includes controls for mean population, mean life expectancy, mean per capita GDP, TFR between 1994-2000, TFR between 2001-2008, and mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

[†] Omitted due to collinearity: Mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations from 1995 – 2000 and from 2001- 2008

[‡] Omitted due to collinearity: Mean per capita GDP, TFR between 1994-2000 and 2001-2008, and mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

[§] Omitted due to collinearity: Mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations from 2001 – 2008

Table 5: Adjusted and Unadjusted Odds Ratios for the Association between Skilled Birth Attendance at Delivery and the Status of the Mexico City Policy (active or inactive), 1994 – 2008^a

	Unadjusted OR (95% CI)	OR Adjusted for respondent characteristics (95% CI) ^b	OR Adjusted for country and respondent characteristics (95% CI) ^c
All regions, all countries	1.30 (1.27 – 1.32)	1.30 (1.27 – 1.33)	1.36 (1.33 – 1.39)
Latin America and the Caribbean	3.06 (2.90 – 3.22)	2.96 (2.78 – 3.15)	2.26 [†] (2.11 – 2.43)
North Africa, Central Asia, and Eastern Europe	2.96 (2.72 – 3.22)	2.33 (2.13 – 2.57)	2.30 [‡] (2.09 – 2.53)
South and Southeastern Asia	1.35 (1.30 – 1.40)	1.15 (1.10 – 1.21)	1.30 [†] (1.24 – 1.37)
sub-Saharan Africa	1.03 (1.00 – 1.06)	1.01 (0.98 – 1.04)	1.12 (1.08 – 1.15)

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author - see Appendix 4.

OR, odds ratio; CI, Confidence Interval; DHS, Demographic and Health Surveys

^a All logistic regression models were run using the sample weight variables built into the DHS datasets

^b Includes controls for age, place of residence (rural vs. urban), years of education, marital status, and multiparity

^c Includes controls for mean population, mean life expectancy, mean per capita GDP, TFR between 1994-2000, TFR between 2001-2008, and mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

[†] Omitted due to collinearity: Mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations from 1995 – 2000 and from 2001- 2008

[‡] Omitted due to collinearity: Mean per capita GDP, TFR between 1994-2000, TFR between 2001-2008, and mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

Table 6: Adjusted and Unadjusted Odds Ratios for the Association between Effective Antenatal Care and the Status of the Mexico City Policy (active or inactive) among Countries with either High or Low Exposure to the Policy, 1994 – 2008^a

		Unadjusted OR (95% CI)	OR Adjusted for respondent characteristics (95% CI) ^b	OR Adjusted for country & respondent characteristics (95% CI) ^c
All regions, All Countries	High Exposure	1.92 (1.85 – 1.99)	1.94 (1.87 – 2.02)	2.04 (1.96 – 2.12)
	Low Exposure	1.04 (1.01 – 1.08)	1.06 (1.03 – 1.10)	1.09 (1.05 – 1.12)
Latin America and the Caribbean	High Exposure	3.87 (3.56 – 4.21)	3.31 (3.02 – 3.62)	2.90 [†] (2.65 – 3.17)
	Low Exposure	1.88 (1.54 – 2.30)	1.78 (1.43 – 2.22)	*
North Africa, Central Asia, and Eastern Europe	High Exposure	3.21 (2.96 – 3.48)	3.25 (2.98 – 3.53)	2.45 [‡] (2.23 – 2.70)
	Low Exposure	1.29 (0.74 – 2.22)	2.12 (1.10 – 4.08)	*
South and Southeastern Asia	High Exposure	2.56 (2.37 – 2.78)	2.27 (2.06 – 2.50)	2.11 [‡] (1.91 – 2.33)
	Low Exposure	1.32 (1.25 – 1.40)	1.21 (1.14 – 1.29)	1.60 [¶] (1.50 – 1.71)
sub-Saharan Africa	High Exposure	1.11 (1.04 – 1.17)	1.21 (1.13 – 1.29)	1.73 (1.61 – 1.86)
	Low Exposure	0.89 (0.85 – 0.93)	0.95 (0.91 – 1.00)	1.24 (1.18 – 1.31)

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author - see Appendix 4.

OR, odds ratio; CI, Confidence Interval; DHS, Demographic and Health Surveys

^a All logistic regression models were run using the sample weight variables built into the DHS datasets

^b Includes controls for age, place of residence (rural vs. urban), years of education, marital status, and multiparity

^c Includes controls for mean population, mean life expectancy, mean per capita GDP, TFR between 1994-2000, TFR between 2001-2008, and mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

*Because these regions each had only 1 country with low exposure to the policy, the country characteristics for all respondents within these two regions are the same, and adjusting for country characteristics is not necessary.

[†] Omitted due to collinearity: TFR between 2001-2008, and mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

[‡] Omitted due to collinearity: Mean life expectancy, mean per capita GDP, TFR between 1994-2000, TFR between 2001-2008, and mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

[¶] Omitted due to collinearity: TFR between 1994-2000, TFR between 2001-2008, and mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

Table 7: Adjusted and Unadjusted Odds Ratios for the Association between Skilled Birth Attendance at Delivery and the Status of the Mexico City Policy (active or inactive) among Countries with either High or Low Exposure to the Policy, 1994 – 2008^a

		Unadjusted OR (95% CI)	OR Adjusted for respondent characteristics (95% CI) ^b	OR Adjusted for country and respondent characteristics (95% CI) ^c
All regions, All Countries	High Exposure	1.50 (1.46 – 1.54)	1.56 (1.52 – 1.61)	1.72 (1.67 – 1.78)
	Low Exposure	1.09 (1.06 – 1.12)	1.05 (1.02 – 1.09)	1.12 (1.09 – 1.16)
Latin America and the Caribbean	High Exposure	3.20 (3.02 – 3.38)	3.17 (2.97 – 3.39)	2.33 [†] (2.16 – 2.52)
	Low Exposure	1.78 (1.47 – 2.15)	1.59 (1.29 – 1.95)	*
North Africa, Central Asia, and Eastern Europe	High Exposure	3.09 (2.84 – 3.36)	2.41 (2.19 – 2.65)	2.28 [‡] (2.07 – 2.51)
	Low Exposure	48.83 (6.38 – 373.38)	39.94 (5.18 – 308.19)	*
South and Southeastern Asia	High Exposure	1.48 (1.37 – 1.60)	1.32 (1.21 – 1.43)	1.50 [§] (1.37 – 1.64)
	Low Exposure	1.28 (1.20 – 1.34)	1.21 (1.15 – 1.28)	1.31 [¶] (1.24 – 1.39)
sub-Saharan Africa	High Exposure	1.00 (0.96 – 1.05)	1.01 (0.96 – 1.05)	0.93 (0.88 – 0.99)
	Low Exposure	0.96 (0.92 – 0.99)	0.98 (0.94 – 1.03)	1.02 (0.98 – 1.08)

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012. Data manipulations by first author - see Appendix 4.

OR, odds ratio; CI, Confidence Interval; DHS, Demographic and Health Surveys

^a All logistic regression models were run using the sample weight variables built into the DHS datasets

^b Includes controls for age, place of residence (rural vs. urban), years of education, marital status, and multiparity

^c Includes controls for mean population, mean life expectancy, mean per capita GDP, TFR between 1994-2000, TFR between 2001-2008, and mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

*Because these regions each had only 1 country with low exposure to the policy, the country characteristics for all respondents within these two regions are the same, and adjusting for country characteristics is not necessary.

[†] Omitted due to collinearity: Mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

[‡]Omitted due to collinearity: Mean life expectancy, mean per capita GDP, TFR between 1994-2000, TFR between 2001-2008, and mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

[§] Omitted due to collinearity: Mean per capita GDP, TFR between 1994-2000, TFR between 2001-2008, and mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

[¶] Omitted due to collinearity: TFR between 1994-2000, TFR between 2001-2008, and mean per capita aid for family planning and reproductive health care from other OECD nations and multilateral organizations both from 1995 – 2000 and from 2001- 2008

Appendix 1: Systematic Review of the Literature - Search Strategy and Outcomes Table

Search Strategy for the Systematic Review of the Literature

On February 7, 2012, I conducted searches of the MEDLINE, EMBase, Global Health Search, and JSTOR databases using the search term “‘gag rule’ OR ‘Mexico City Policy’” in combination with a list of MeSH terms for reproductive health outcomes, including “Family Planning Services,” “Reproductive Health,” “Abortion, Induced,” “Maternal Mortality,” “Contraception,” and “Pregnancy, Unplanned.” Because of the volume of articles retrieved from the JSTOR search, the search of this database was conducted using limits of English and publication dates from 1983 to 2012. Together, the initial searches yielded 373 articles. I then conducted an abstract review, selecting for review only studies that examined the effects of the Mexico City Policy on health-related outcomes. I specifically excluded studies of the effects of the Mexico City Policy on reproductive health funding or health care systems, and I also excluded case studies of individual women. Based on the abstract review, I then conducted a hand search of the references of 10 articles.{{66 Bogecho,D. 2006; 65 Bendavid,E. 2011; 82 Cincotta,Richard P. 2001; 101 Cohen, S.A. 2011; 70 Crane,B.B. 2004; 102 Gezinski, L.B. 2011; 99 Kulczycki,Andrzej 2007; 81 McFarlane,Deborah R. 2006; 71 Miller,S. 2005; 98 Thapa,Shyam 2004}} Base on this search, only one study met my inclusion criteria, and it is reviewed here.

Outcomes Table for Systematic Review

Study	Authors: Bendavid E, <i>et al.</i> Year: 2011 Country: United States
Funding	NIH, Center on the Demography and Economics of Health and Aging, and the Rosenkranz Prize for Health Care Research in Developing Countries.
Design	Study Design: Comparative Retrospective Multination Analysis of Individual-level Household Surveys

	Setting: 20 sub-Saharan African Countries Sample Size: 261,116 women																												
Inclusion Criteria	<ol style="list-style-type: none">1. Women in sub-Saharan Africa who responded to a Demographic and Health Survey (DHS) between the years 1994 and 20082. DHS survey includes data on pregnancy outcomes3. Country received some US foreign assistance for family planning and reproductive health																												
Exclusion Criteria	<ol style="list-style-type: none">1. DHS survey in a sub-Saharan African country between 1994-2008 without individual pregnancy outcome data																												
Exposure measurement	<p><u>Exposure to the Mexico City Policy (MCP)</u> – The amount of foreign assistance for family planning and reproductive health provided to a country by the United States during the years when the policy was not in effect. Figures are based on the OECD Creditor Reporting System data available between 1995-2000.</p> <p>-Countries are classified as ‘high’ or ‘low’ exposure to the policy based on the median level of foreign aid for all 20 countries in the study.</p> <p>-Use of OECD data as a measure of exposure was validated by re-analyzing the data using USAID figures on foreign aid for family planning and reproductive health as measure of exposure to the policy. Further validated by reanalyzing the data using OECD figures as a continuous variable rather than a dichotomous ‘high’ and ‘low’ exposure variable.</p>																												
Study population characteristics	<p><u>Baseline characteristics of individual survey respondents</u> – Not reported</p> <p><u>‘High’ and ‘low’ exposure countries descriptive parameters similar at baseline</u> – Yes</p> <p><u>Study countries similar at baseline to descriptive parameters for all of sub-Saharan Africa</u> – Yes</p> <table><tr><td></td><td><u>Low Exp.</u></td><td><u>High Exp.</u></td><td><u>All sub-Saharan Africa</u></td></tr><tr><td>Mean life expectancy</td><td>50.6 yrs</td><td>53.4 yrs</td><td>52.8yrs</td></tr><tr><td>Mean population in urban areas</td><td>30.1%</td><td>28.1%</td><td>19.0%</td></tr><tr><td>Per capita gross domestic product</td><td>\$1462</td><td>\$1245</td><td>\$2964</td></tr><tr><td>Women using modern contraceptives</td><td></td><td></td><td></td></tr><tr><td> 1994</td><td>14.7%</td><td>9.0%</td><td>NA</td></tr><tr><td> 2008</td><td>22.2%</td><td>15.6%</td><td>NA</td></tr></table>		<u>Low Exp.</u>	<u>High Exp.</u>	<u>All sub-Saharan Africa</u>	Mean life expectancy	50.6 yrs	53.4 yrs	52.8yrs	Mean population in urban areas	30.1%	28.1%	19.0%	Per capita gross domestic product	\$1462	\$1245	\$2964	Women using modern contraceptives				1994	14.7%	9.0%	NA	2008	22.2%	15.6%	NA
	<u>Low Exp.</u>	<u>High Exp.</u>	<u>All sub-Saharan Africa</u>																										
Mean life expectancy	50.6 yrs	53.4 yrs	52.8yrs																										
Mean population in urban areas	30.1%	28.1%	19.0%																										
Per capita gross domestic product	\$1462	\$1245	\$2964																										
Women using modern contraceptives																													
1994	14.7%	9.0%	NA																										
2008	22.2%	15.6%	NA																										
Outcome assessment	<p><u>Number of induced abortions</u> – Data on terminated pregnancies is collected in Demographic and Health Surveys (DHS), nationally representative household surveys of women 15-49 years in low- and middle-income countries.</p> <p>-Women retrospectively report pregnancy outcomes during the 5-6 years preceding the DHS interview.</p> <p>-Not all DHS surveys distinguish between induced and spontaneous abortions, so authors used an independently-validated WHO algorithm that uses a number of other individual factors to classify terminations as either induced or spontaneous.</p>																												
Analysis	<p>-Logistic regression is used to compare the odds of induced abortion between women living in high and low exposure countries during the time when the MCP was not in effect (1994 – 2000) and during the time when it was in effect (2000-2008)</p> <p>-They adjusted the model for women’s personal characteristics, country characteristics, and other annual per capita donations for family planning and reproductive health. They also controlled for interaction between MCP’s status (in effect vs repealed) and a countries exposure to the MCP.</p>																												
Results	-Mean annual induced abortion rate for women in all study countries: 13 per 10,000																												

	<p>woman-years</p> <p>-Mean annual induced abortion rate for women in all study countries:</p> <table><tr><td><u>Prior to MCP (1994 – 2001)</u></td><td><u>After MCP reinstatement (2001-2008)</u></td><td><u>p</u></td></tr><tr><td>10.4 per 10,000 woman-years</td><td>14.5 per 10,000 woman-years</td><td>p=0.01</td></tr></table> <p>-Odds Ratio of induced abortion among women in high exposure countries after MCP reinstatement: Unadjusted 2.73 (95%CI: 1.95-3.82); Adjusted 2.55 (95%CI: 1.76 – 3.71)</p> <p>-Odds Ratio of induced abortion among women in high exposure countries after MCP reinstatement for each additional year under the policy: 1.21 (95% CI: 1.10-1.37)</p>	<u>Prior to MCP (1994 – 2001)</u>	<u>After MCP reinstatement (2001-2008)</u>	<u>p</u>	10.4 per 10,000 woman-years	14.5 per 10,000 woman-years	p=0.01
<u>Prior to MCP (1994 – 2001)</u>	<u>After MCP reinstatement (2001-2008)</u>	<u>p</u>					
10.4 per 10,000 woman-years	14.5 per 10,000 woman-years	p=0.01					
Strengths	<p><u>Overall</u></p> <p>-Meticulous explanation of methods allows for thorough and in depth appraisal of the results</p> <p>-Comprehensive investigation of potential sources of error and bias with careful efforts to eliminate both to the greatest degree possible</p> <p><u>Exposure Data</u></p> <p>-Creative, novel means of measuring ‘exposure’ to the Mexico City Policy followed by through appropriate reanalysis for validation.</p> <p><u>Outcomes Data</u></p> <p>-Use of DHS data, a rigorous, well-studied data source for reproductive health indicators.</p> <p>-Creative use of a validated WHO algorithm to glean abortion classification data from the available data.</p> <p><u>Primary analysis</u></p> <p>-Elegant use of logistic regression as a means of examining the odds of induced abortion in high exposure countries after the reinstatement of MCP given the absence of comparative longitudinal data for all countries before and after the reinstatement.</p> <p>-The magnitude of the result remained strong after the model was adjusted to account for a number of individual respondent characteristics and country characteristics</p> <p><u>Additional analyses</u></p> <p>-Authors employed a number of secondary analyses to assess potential sources of bias.</p> <p>-To account for recall bias in survey data, they re-analyzed the data using a shorter recall period for pregnancy outcomes.</p> <p>-They investigated other potential mechanisms that might for changes in the induced abortion rate, like the contraceptive prevalence rate, finding the rate of increase in contraception usage slowed after reinstatement of MCP in high exposure countries.</p> <p>-In order to identify any outlying surveys or countries, they conducted sensitivity analyses, reanalyzing the data without one survey at a time</p> <p>-In order to validate the measure of exposure to the policy, they repeated the analyses using a continuous measure of exposure to MCP based on OCED data and using a dichotomous measure of exposure based on USAID data and found that the results held.</p>						
Weaknesses	<p><u>Study groups</u></p> <p>-Because countries could not be randomized to ‘high’ and ‘low’ exposure groups, systematic differences between the countries and the women in the two groups may exist. The authors adjusted the final model to account for some individual and country characteristics, but some differences may not be accounted for.</p> <p>-Limited descriptive statistics reported to compare ‘high’ and ‘low’ exposure countries, and no descriptive statistics reported to compare women in the ‘high’ and ‘low’ exposure countries, make it difficult to assess initial comparability of groups.</p> <p><u>Outcomes Data</u></p> <p>-Because DHS data is not available for every country before and after the reinstatement of the MCP, this is not truly a longitudinal study, but authors attempted to account for this in their analysis using logistic regression model.</p> <p>-Because the DHS data reflects retrospective self-report of a potentially stigmatized event, there is a high potential for misreporting. Authors conducted a secondary analysis to attempt</p>						

	<p>to assess recall bias.</p> <p><u>Additional Analyses</u></p> <p>-No secondary analysis of the sub-Saharan countries without DHS data on pregnancy outcomes was conducted to compare to those studies included in the analysis to those excluded. This may have allowed the authors to comment on how the exclusion of these countries might have affected the results.</p>
Quality Rating	Good

SOURCE: Bendavid E, Avila P, Miller G. United States aid policy and induced abortion in sub-Saharan Africa. *Bull World Health Organ.* 2011. 89:873-880C.

CI, Confidence Interval; DHS, Demographic and Health Surveys; MCP, Mexico City Policy; OECD, Organization for Economic Coordination and Development; NIH, National Institutes of Health; USAID, United States Agency for International Development; WHO, World Health Organization

Appendix 2: Demographic and Health Surveys Included in Analysis

Survey No.	Country No.	Year	Country	Region*	DHS Survey Type and Phase
1	1	2005	Armenia	North Africa, Central Asia, & Eastern Europe	Standard DHS V
2		2000	Armenia		Standard DHS IV
3	2	2007	Bangladesh	South & Southeast Asia	Standard DHS V
4		2004	Bangladesh		Standard DHS IV
5		1999-2000	Bangladesh		Standard DHS IV
6		1996-1997	Bangladesh		Standard DHS III
7	3	2006	Benin	sub-Saharan Africa	Standard DHS V
8		2001	Benin		Standard DHS IV
9		1996	Benin		Standard DHS III
10	4	2008	Bolivia	Latin America & Caribbean	Standard DHS V
11		2003	Bolivia		Standard DHS IV
12		1998	Bolivia		Standard DHS III
13		1994	Bolivia		Standard DHS III
14	5	2003	Burkina Faso	sub-Saharan Africa	Standard DHS IV
15		1998-1999	Burkina Faso		Standard DHS III
16	6	2005	Cambodia	South & Southeast Asia	Standard DHS V
17		2000	Cambodia		Standard DHS IV
18	7	2004	Cameroon	sub-Saharan Africa	Standard DHS IV
19		1998	Cameroon		Standard DHS III
20	8	2004	Chad	sub-Saharan Africa	Standard DHS IV
21		1996-1997	Chad		Standard DHS III
22	9	2005	Columbia	Latin America & Caribbean	Standard DHS V
23		2000	Columbia		Standard DHS IV
24		1995	Columbia		Standard DHS III
25	10	2007	Dominican Republic	Latin America & Caribbean	Standard DHS V
26		2002	Dominican Republic		Standard DHS IV
27		1999	Dominican Republic		Standard DHS IV
28		1996	Dominican Republic		Standard DHS III
29	11	2008	Egypt	North Africa, Central Asia, & Eastern Europe	Standard DHS V

30		2005	Egypt		Standard DHS V
31		2000	Egypt		Standard DHS IV
32		1995	Egypt		Standard DHS III
33	12	2005	Ethiopia	sub-Saharan Africa	Standard DHS V
34		2000	Ethiopia		Standard DHS IV
35	13	2008	Ghana	sub-Saharan Africa	Standard DHS V
36		2003	Ghana		Standard DHS IV
37		1998	Ghana		Standard DHS IV
38	14	2005	Guinea	sub-Saharan Africa	Standard DHS V
39		1999	Guinea		Standard DHS IV
40	15	2005-2006	Haiti	Latin America & Caribbean	Standard DHS V
41		2000	Haiti		Standard DHS IV
42		1994-1995	Haiti		Standard DHS III
43	16	2005-2006	India	South & Southeast Asia	Standard DHS V
44		1998-1999	India		Standard DHS IV
45	17	2007	Indonesia	South & Southeast Asia	Standard DHS V
46		2002-2003	Indonesia		Standard DHS IV
47		1997	Indonesia		Standard DHS III
48		1994	Indonesia		Standard DHS III
49	18	2007	Jordan	North African, Central Asia, & Eastern Europe	Standard DHS V
50		2002	Jordan		Standard DHS IV
51		1997	Jordan		Standard DHS III
52	19	2003	Kenya	sub-Saharan Africa	Standard DHS IV
53		1998	Kenya		Standard DHS III
54	20	2003-2004	Madagascar	sub-Saharan Africa	Standard DHS IV
55		1997	Madagascar		Standard DHS III
56	21	2004	Malawi	sub-Saharan Africa	Standard DHS IV
57		2000	Malawi		Standard DHS IV
58	22	2006	Mali	sub-Saharan Africa	Standard DHS V
59		2001	Mali		Standard DHS IV
60		1995-1996	Mali		Standard DHS III
61	23	2003	Mozambique	sub-Saharan Africa	Standard DHS IV
62		1997	Mozambique		Standard DHS III
63	24	2006-2007	Namibia	sub-Saharan Africa	Standard DHS V
64		2000	Namibia		Standard DHS IV
65	25	2006	Nepal	South & Southeast Asia	Standard DHS V

66		2001	Nepal		Standard DHS IV
67		1996	Nepal		Standard DHS III
68	26	2001	Nicaragua	Latin America & Caribbean	Standard DHS IV
69		1998	Nicaragua		Standard DHS III
70	27	2006	Niger	sub-Saharan Africa	Standard DHS V
71		1998	Niger		Standard DHS III
72	28	2008	Nigeria	sub-Saharan Africa	Standard DHS V
73		2003	Nigeria		Standard DHS IV
74		1999	Nigeria		Standard DHS IV
75	29	2004-2006	Peru	Latin America & Caribbean	Continuous DHS V
76		2000	Peru		Standard DHS IV
77		1996	Peru		Standard DHS III
78	30	2008	Philippines	South & Southeast Asia	Standard DHS V
79		2003	Philippines		Standard DHS IV
80		1998	Philippines		Standard DHS III
81	31	2005	Rwanda	sub-Saharan Africa	Standard DHS V
82		2000	Rwanda		Standard DHS IV
83	32	2005	Senegal	sub-Saharan Africa	Standard DHS IV
84		1997	Senegal		Standard DHS III
85	33	2004-2005	Tanzania	sub-Saharan Africa	Standard DHS IV
86		1999	Tanzania		Standard DHS IV
87		1996	Tanzania		Standard DHS III
88	34	2006	Uganda	sub-Saharan Africa	Standard DHS V
89		2000-2001	Uganda		Standard DHS IV
90		1995	Uganda		Standard DHS III
91	35	2002	Vietnam	South & Southeast Asia	Standard DHS IV
92		1997	Vietnam		Standard DHS III
93	36	2007	Zambia	sub-Saharan Africa	Standard DHS V
94		2001-2002	Zambia		Standard DHS IV
95		1996	Zambia		Standard DHS III
96	37	2005-2006	Zimbabwe	sub-Saharan Africa	Standard DHS V
97		1999	Zimbabwe		Standard DHS IV
98		1994	Zimbabwe		Standard DHS III

SOUCRE: MEASURE DHS (www.measuredhs.com/) downloaded 05/27/2012.

DHS, Demographic and Health Surveys

Appendix 3: Financial Assistance for Family Planning and Reproductive Health Care from the United States between 1995 – 2000

Country	Total Financial Assistance for FP & RHC in USD*	Mean Population [†]	Mean per Capita Financial Assistance in USD	Exposure to the Mexico City Policy
Armenia	1,307,000	3,055,167	0.427799902	Low
Bangladesh	80,194,000	126,678,500	0.633051386	Low
Benin	4,629,000	6,116,833	0.756764121	High
Bolivia	53,508,615	7,780,667	6.877124711	High
Burkina Faso	0	10,725,333	0	Low
Cambodia	56,494,646	11,815,167	4.781536105	High
Cameroon	0	14,468,000	0	Low
Chad	0	7,369,000	0	Low
Columbia	0	37,809,500	0	Low
Dominican Republic	13,068,000	8,112,333	1.610880552	High
Egypt	135,961,796	61,853,167	2	High
Ethiopia	9,900,000	59,746,000	0.16570147	Low
Ghana	13,237,000	18,702,833	0.707753727	Low
Guinea	21,940,394	7,891,667	2.780197761	High
Haiti	26,377,000	7,994,167	3.299530908	High
India	82,764,000	963,483,167	0.085900826	Low
Indonesia	22,550,000	205,887,167	0.109526011	Low
Jordan	35,500,000	4,433,500	8.007217774	High
Kenya	8,853,000	28,863,667	0.306717788	Low
Madagascar	15,596,000	14,614,500	1.067159328	High
Malawi	14,625,000	11,010,667	1.328257447	High
Mali	12,479,000	9,939,833	1.255453646	High
Mozambique	31,961,000	16,984,000	1.881829958	High
Namibia	0	1,786,333	0	Low
Nepal	48,073,000	23,379,500	2.056203084	High
Nicaragua	20,553,000	4,639,333	4.43016238	High
Niger	0	10,047,500	0	Low
Nigeria	13,152,000	116,889,000	0.112517003	Low
Peru	30,205,000	24,860,333	1.214987731	High

Philippines	63,833,000	76,900,167	0.830076224	High
Rwanda	1,829,000	7,388,000	0.247563617	Low
Senegal	14,081,650	8,923,667	1.578011654	High
Tanzania	18,999,000	31,618,167	0.60088873	Low
Uganda	14,086,929	22,247,667	0.633186806	Low
Vietnam	425,000	76,535,167	0.005553003	Low
Zambia	17,632,000	9,661,333	1.8250069	High
Zimbabwe	5,101,000	11,517,500	0.442891252	Low

SOURCE: Organization for Economic Cooperation and Development (OECD) Creditor Reporting System (stats.oecd.org) and US Census Bureau International Database (www.census.gov/population/international/data/idb/) both downloaded on 05/25/2012. Data manipulation by first author.

FP, Family Planning; RHC, Reproductive Health Care; USD, United States Dollar

Appendix 4: Variables & Variable Transformations

Original Variable	Definition	Manipulated Variable	New Variable Values
CASEID	Unique identifier	As is	--
V005	Sample weight	As is	--
B2_01	One, two, and four digit year of birth of most recent birth ¹	B2_01	1960 – 2008= four digit birth year of most recent birth
		Births1yr	0=Reports no birth in the 12-24 months prior to completion of the survey 1=Reports birth in the 12-24 months prior to completion of the survey .=Missing data (No reported pregnancy history)
BORD_01	Birth order of most recent birth	Multiparous	0= Reports most recent birth is first, second, or third birth 1= Reports most recent birth is fourth birth or higher . = Reports no births/nulliparous
V012	Age of respondent in yrs	As is	--
V102	Place of residence of respondent	V102recode	0=rural 1=urban
V106	Respondent's highest level of education attended	As is	--
V133	Respondent's yrs of education	As is	--
V149	Respondent's highest level of completed education	As is	--
V501	Respondent's current marital status	Marriage	0 = Not currently married 1 = Currently married
V502	Respondent's current marital status	As is	--

¹ Birth year data collected from Ethiopia and Nepal were recorded according to the Ethiopian and Nepali calendars, respectively. For consistency and comparability between countries, the birth year data were converted to the corresponding dates in the Western Calendar.

M2A_1 - M2E_1	Antenatal care provider for most recent pregnancy	ANChp	0=Reports no ANC from any health professional during most recent pregnancy 1= Reports ANC from a health professional . = Missing data
		ANCskilled ²	0=Reports no ANC from a skilled birth attendant (doctor, nurse, or midwife) during most recent pregnancy 1= Reports ANC from a skilled birth attendant (doctor, nurse or midwife) . = Missing data
M13_1	Timing of first ANC visit in months for most recent pregnancy	FirstANC	0= Reports no antenatal care 1= First ANC visit in 3 rd Trimester 2= First ANC visit in 2 nd Trimester 3= First ANC visit in 1 st Trimester . = Missing data
M14_1	Number of ANC visits during most recent pregnancy	NumberANC	0= Reports no antenatal care 1= 1 ANC visit 2 = 2 ANC visits 3 = 3 ANC visits 4 = 4 or more ANC visits . = Missing data
ANCIndex	Combination variable classifying respondents based on the combination of all three elements of effective antenatal care: 1) First visit in the first trimester (FirstANC) 2) At least 4 visits during the pregnancy (NumberANC) 3) ANC provided by a	ANCIndex	0 = Respondent reports no ANC visits with a skilled attendant at any time during most recent pregnancy 1 = Adequate ANC on 1 out of 3 elements of effective ANC 2 = Adequate ANC on 2 out of 3 elements of effective ANC 3 = Adequate ANC on 3 out of 3 elements of effective ANC, meaning respondent reports at least 4 ANC visits provided by a skilled attendant with the first visit occurring during the first trimester

² In some countries, some categories of doctors, nurses, and midwives were coded as either M2C_1, M2D_1, or M2E_1 rather than M2A_1 for doctors and M2B_1 for nurses and midwives as is the convention. These countries were identified, and the ANCskilled variable includes all doctors, nurses, and midwives reported by respondents, regardless of differences in coding schemes. Affected countries include Dominican Republic, Nicaragua, Peru, Cambodia, Indonesia, Philippines, Burkina Faso, Chad, Ethiopia, and Guinea.

	skilled birth attendant (ANCskilled)		. = Missing data
M3A_1 - M3E_1	Delivery attendant for most recent birth	HPattend	0=Reports no health professional at most recent delivery 1= Reports a health professional attendant at most recent delivery . = Missing data
		SkilledAttend ³	0=Reports no skilled birth attendant (doctor, nurse, or midwife) at most recent delivery 1= Reports a skilled birth attendant (doctor, nurse, or midwife) at most recent delivery . = Missing data
year	Survey year or year of survey completion	MCPstatus	0 = MCP not in effect (1994-2000) 1 = MCP reinstated (2001-2008)
country	Survey country	CountryID	1 – 37 = numerical code for country
region	Surveyed country's global region as categorized by Measure DHS	As is	--
USaid_FP	Mean per capita financial assistance from the United States for FP and RHC between 1995-2000	MCPexposure	0= Low exposure to MCP (Mean per capita financial assistance below the median) 1= High exposure to MCP (Mean per capita financial assistance above the median)
MCPIndex	Combination variable denoting both the level of exposure to MCP and the status of the policy at the time of the survey	MCPIndex	0 = Policy not in effect (1994-2000) and low exposure to the policy 1 = Policy not in effect (1994 – 2000) and high exposure to the policy 2 = Policy in effect (2001-2008) and low exposure to the policy 3 = Policy in effect (2001-2008) and high exposure to the policy
Population	Mean Population by Country between	As is	--

³ In some countries, some categories of doctors, nurses, and midwives were coded as either M3C_1, M3D_1, or M3E_1 rather than M3A_1 for doctors and M3B_1 for nurses and midwives as is the convention. These countries were identified, and the SkilledAttend variable includes all doctors, nurses, and midwives reported by respondents, regardless of differences in coding schemes. Affected countries include Armenia, Dominican Republic, Peru, Cambodia, Indonesia, Philippines, Burkina Faso, Chad, Ethiopia, Guinea, Madagascar, Mali, and Niger.

	1994-2008		
LifeExpect	Mean Life Expectancy at Birth by Country in years between 1994-2008	As is	--
GDP	Mean per Capita Gross Domestic Product by Country in USD between 1994-2008	As is	--
TFR1990s	Total Fertility Rate by Country, expressed in children per woman.	As is	--
TFR2000s	Total Fertility Rate by Country, expressed in children per woman.	As is	--
Aid_before	Mean per Capita Aid for Family Planning and Reproductive Health Care from all non-US OECD Nations and Multilateral Organizations between 1995-2000. Reported by Country in USD.	As is	--
Aid_after	Mean per Capita Aid for Family Planning and Reproductive Health Care from all non-US OECD Nations and Multilateral Organizations between 2001-2008. Reported by Country in USD.	As is	--

SOURCE: MEASURE DHS (www.measuredhs.com/) downloaded 5/27/2012. The Organization for Economic Cooperation and Development (OECD) Creditor Reporting System (stats.oecd.org/) and the US Census Bureau International Data Base (www.census.gov/population/international/data/idb/) downloaded 05/25/2012 and 06/17/2012. The World Bank World DataBank (databank.worldbank.org/data/home.aspx), and World Fertility Data 2008 from the UN Population Division (www.un.org/esa/population/publications/WFD%202008/Main.html) downloaded 06/17/2012.

ANC, Antenatal Care; DHS, Demographic and Health Surveys; FP, Family Planning; GDP, Gross Domestic Product; MCP, Mexico City Policy; OECD, Organization for Economic Cooperation and Development; RHC, Reproductive Health Care; USD, United States Dollar